

DENON

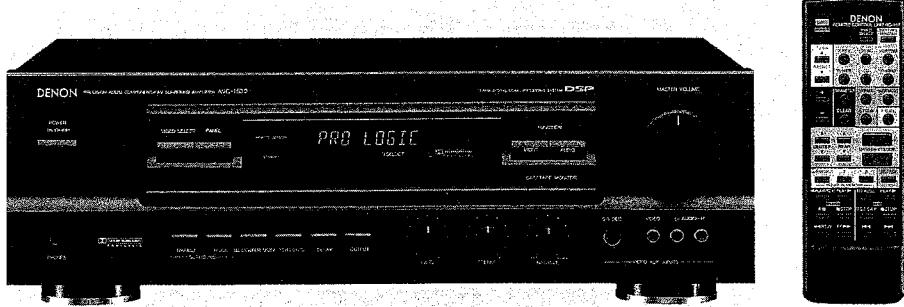
Hi-Fi AV Surround Amplifier

SERVICE MANUAL

MODEL AVC-1530/1530G

AV SURROUND AMPLIFIER

Multi Voltage, U.K. Models



(Photo: AVC-1530)

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NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

| | | |
|---|--|--|
| • Audio Section | for U.K. model | for multi voltage model |
| (Power amplifier) | Front (main 2ch driven) 70 W + 70 W (8 ohms, 20 Hz - 20 kHz with 0.1% THD) | Front 90 W + 90 W (6 ohms, EIAJ) |
| Rated output: | CENTER (center 1ch driven) 70 W (8 ohms, 20 Hz - 20 kHz with 0.1% THD) | Center 90 W (6 ohms, EIAJ) |
| (All properties shown are only for the power amplifier stage.) | REAR (rear 2ch driven) 20 W + 20 W (8 ohms, 1 kHz with 0.5% THD) | Rear 25 W + 25 W (6 ohms, EIAJ) |
| Output terminals: | Front: 6 to 16 ohms Center: 6 to 16 ohms Rear: 6 to 16 ohms | |
| Line input (Each line input - FRONT SP OUT) | | |
| Input sensitivity / impedance: | 150 mV/47 k ohms | PHONO (MM): 2.5 mV/47 kohms |
| Frequency response: | 10 Hz to 50 kHz | ±3 dB |
| Tone control range: | BASS: TREBLE: | ±10 dB at 100 Hz ±10 dB at 10 kHz |
| Signal-to-noise ratio | 92 dB | |
| Phono equalizer (PHONO input - REC OUT) | | |
| RIAA deviation: | ±1 dB (20 Hz to 20 kHz) | |
| Signal-to-noise ratio: | 74 dB (A weighting, with 5 mV input) | |
| Rated output / Maximum output: | 150 mV/8 V | |
| Distortion factor: | 0.03% (1 kHz, 1 V) | |
| • Video Section | | |
| Standard video jacks | | |
| Input and output level / impedance: | 1 Vp-p/75 ohms | |
| Frequency response: | 3 Hz to 8 MHz ±3 dB | |
| S-Video output jacks | | |
| Input and output level / impedance: | | |
| Y (brightness) signal: | 1Vp-p/75 ohms | |
| C (color) signal: | 0.286 Vp-p/75 ohms | |
| Frequency response: | 3 Hz to 8 MHz ±3 dB | |
| • General | | |
| Power supply: | AC 240 V, 50 Hz (for U.K. model) | |
| | AC 110/220 V, 50/60 Hz (for multi-voltage model) | |
| Power consumption: | 230 W (for U.K. model) | |
| | 210 W (for multi-voltage model) | |
| Maximum external dimensions: | 434 (W) × 142 (H) × 337 (D) mm (17-3/32" × 5-19/32" × 13-17/64") (AVC-1530) | |
| | 470 (W) × 143 (H) × 337 (D) mm (18-1/2" × 5-5/8" × 13-17/64") (AVC-1530G) | |
| Weight: | 9.6 kg (21 lbs 3 oz) (AVC-1530) 10.4 kg (22 lbs 15 oz) (AVC-1530G) | |
| • Remote control unit | | |
| System remote control | | |
| RC-167: | Total buttons: 41 | |
| | DENON system code | |
| | Tuner: 2 buttons | |
| | CD player: 6 buttons | |
| | Cassette deck: 6 buttons | |
| | AVC-1530/1530G fixed codes: 27 buttons | |
| | Batteries: R6P/AA Type (two batteries) | |
| | External dimensions: 60 (W) × 175 (H) × 18 (D) mm | |
| | Weight: 120 g (Approx. 4 oz) (including batteries) | |

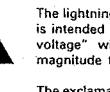
* For purposes of improvement, specifications and design are subject to change without notice.

1 INTRODUCTION

SAFETY PRECAUTIONS



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSERERES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

• FOR UNITED KINGDOM MODEL ONLY

CONNECTING THE MAINS PLUG:

This unit operates from a 240V ac 50 Hz mains supply.

Fit a proper mains plug to the mains lead of this equipment. If a 13 amp (BS1363) plug is used, a 5 amp fuse must be fitted. The 13 amp fuse supplied in a new plug must NOT be used. If any other type of plug is used, a 5 amp fuse must be fitted either in the plug or adapter or at the distribution board.

IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

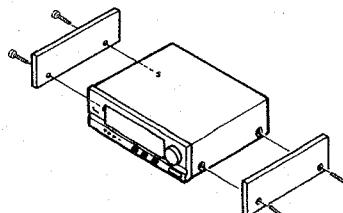
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured red.

DO NOT MAKE ANY CONNECTION TO THE LARGER PIN MARKED WITH THE LETTER E OR BY THE SYMBOL $\frac{1}{2}$ OR COLOURED GREEN OR GREEN-AND-YELLOW.

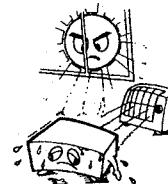
Disconnect the mains plug from the supply socket when not in use.

For models with wood sides: (AVC-1530G ONLY)



If the wood sides are removed, the top cabinet cannot be reinstalled using the same screws.
Consult your store of purchase or a DENON Overseas Service Center.

NOTE ON USE



Be careful of high temperatures

- Do not place the set in a location where it will be exposed to direct sunlight or near a heating appliance.

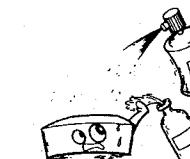
Caution on rack/cabinet installation

- Avoid installing the set in a closed-type rack.
- When installing in a rack or cabinet, provide a sufficiently large ventilation opening to promote heat radiation.



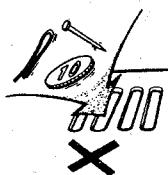
Caution on humidity, water, and dust

- Do not place the set in a location where there is high humidity or a lot of dust.
- Flower vases or other items containing water should not be placed on top of the set.



Care of the case

- Avoid the use of pesticides near the set as well as wiping the case with benzine, thinner or other solvents since they may cause a change in quality or color. Use a soft cloth when wiping away dirt and follow the instructions carefully when using chemically treated cloths.



Do not allow foreign matter into the equipment

- Be especially careful of needles, hair pins, and coins getting into the set.



Care with the power cord

- When removing the plug from the receptacle, do not pull the power cord; be sure to hold the plug when removing it.



During your absence

- When not using the set for an extended period such as when taking a trip, be sure to disconnect the plug from the receptacle.



For sets with ventilation holes

Do not block the ventilation holes of the set

- Blocking of the ventilation holes will lead to damage of the set.
- The ventilation holes are very important for heat radiation from within the set. Care must be taken since placing an object against the holes will result in an extreme rise of temperature within the set.

- We greatly appreciate your purchase of the AVC-1530/1530G.
- To be sure you take maximum advantage of all the features the AVC-1530/1530G has to offer, read these instructions carefully and use the set properly. Be sure to keep this manual for future reference should any questions or problems arise.

● ACCESSORIES

Check that the following parts are included in addition to the main unit:

| | |
|--|---|
| ① Operating instructions | 1 |
| ② AC Plug Adapter (for multi voltage model only) | 1 |
| ③ Remote control unit (RC-167) | 1 |
| ④ R6P/AA batteries | 2 |

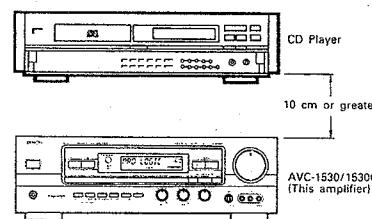
● INSTALLATION PRECAUTIONS

Using this amplifier or other electronic equipment containing microprocessors simultaneously with a tuner or TV may result in noise in the sound or picture.

If this should happen, take the following steps:

- Install the amplifier as far as possible from the tuner or TV set.
- Keep the antenna lines of the tuner or TV as far as possible from the amplifier's power cord and connection cables.
- This problem is especially frequent when using indoor antennas or 300 ohm feeder lines. We recommend using outdoor antennas and 75 ohm coaxial cables.

A note on stacking

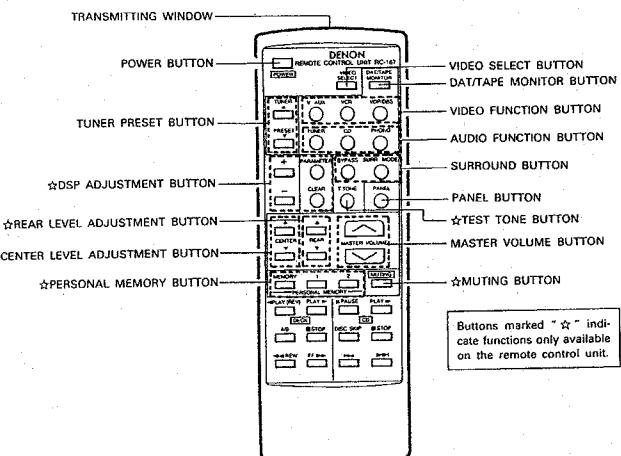
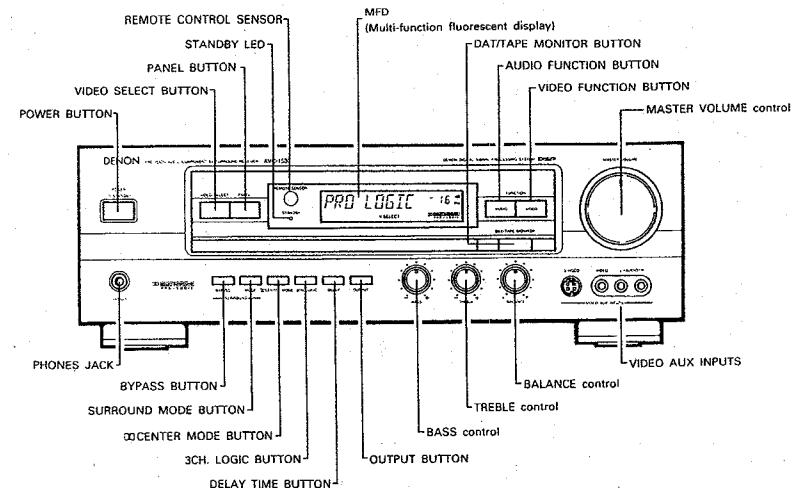


For cooling purposes, do not place another AV component directly on top of the amplifier. Be sure to leave a space of at least 10 cm.

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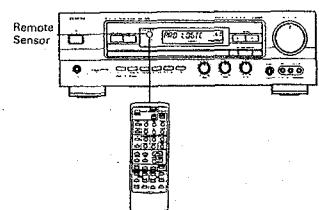
2 NAMES OF PARTS – 1 (Front Panel and Remote Control Unit)



3 REMOTE CONTROL UNIT

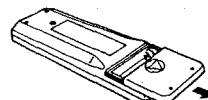
Following the procedure outlined below, insert the batteries before using the remote control unit.

■ Range of operation of the remote control unit

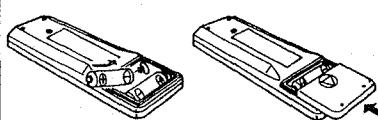


■ Inserting the batteries

1. Open the bottom cover of the remote control unit and remove the battery cover.



2. Insert the two R6P/AA or UM-3 batteries, matching the \oplus and \ominus marks on the batteries with those in the case. Close the bottom cover until it clicks shut.

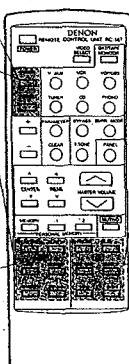


■ System codes

The system codes for DENON tape decks, CD players and tuners are set in this remote control unit.

Tuner system buttons
 \triangle : Preset channel up
 ∇ : Preset channel down

Tape deck system buttons
 These buttons can be used to operate DENON remote controllable components. For details, refer to the component's operating instructions. Note that operation may not be possible for some models.
 \blacktriangleright : Forward play
 \blacktriangleleft : Reverse play
 \blacksquare : Stop
 $\blacktriangleleft\blacktriangleright$: Rewind
 $\blacktriangleright\blacktriangleright$: Fast-forward
 A/B : Switching between decks A and B for double decks

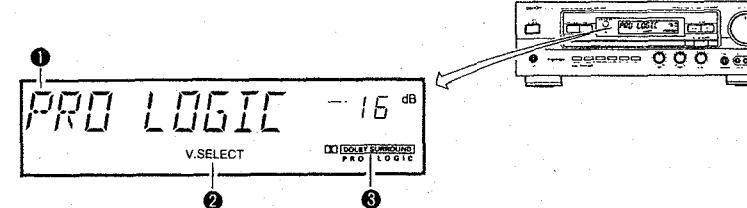


CD system buttons
 These buttons can be used to operate DENON remote controllable components. For details, refer to the component's operating instructions. Note that operation may not be possible for some models.
 \blacktriangleright : Play
 \blacksquare : Pause
 \blacksquare : Stop
 $\blacktriangleleft\blacktriangleright$: Auto search (reverse and forward)
 DISC SKIP : CD changer, disc skip

4 MULTI FUNCTION DISPLAY (MFD)

The MFD indicates the operating modes when operations are performed and when PANEL button is pressed.

■ FLD (Fluorescent Light Display)



■ MULTI FUNCTION DISPLAY

This displays a maximum of 9 characters.

Normally the reception frequency is displayed when the function is set to tuner, and the surround mode is displayed when the function is set to other positions. The display also indicates various other information according to the buttons pressed.

■ To check the settings of the different modes:

1. Press the PANEL button.


- Either hold the PANEL button in or press it repeatedly to display the settings for the different modes.

■ FLD OFF

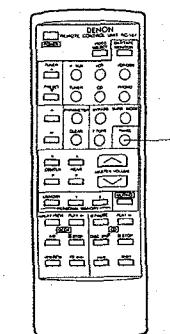
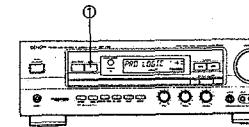
Turning the FLD off:

1. Press and hold in the PANEL button.

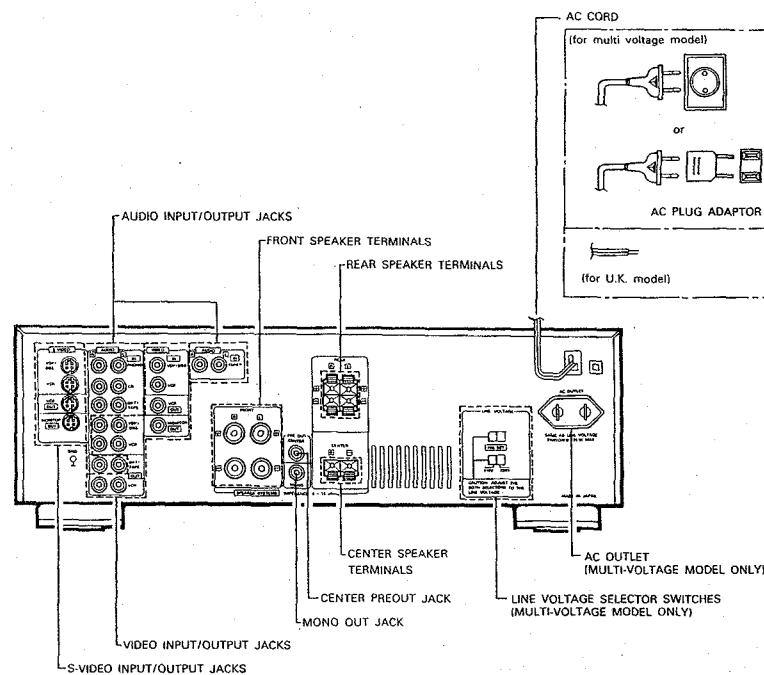
The FLD display changes continuously and finally turns off. Now when a button is pressed, the related display appears for a few seconds then turns off automatically.

2. Turning the FLD back on:

Press the PANEL button once again.



5 NAMES OF PARTS - 2 (Rear Panel)



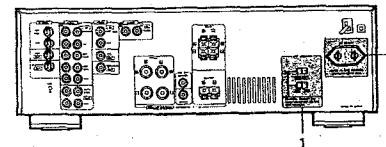
6 CONNECTIONS

→ Continued

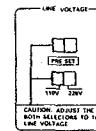
- Always turn off the power of the various components when making connections. Also refer to the operating instructions for the other components.
- Do not plug in the power cord until all connections are completed.

■ MULTI-VOLTAGE MODEL ONLY

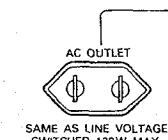
Make the following settings before connecting the components.



1. Setting the line voltage



2. AC OUTLET



- The customer can set the VOLTAGE SELECTORS on the back panel for appropriate line voltage by using a screwdriver.
- Do not use excessive force in setting the VOLTAGE SELECTOR KNOB – you may damage it.
- If the VOLTAGE SELECTOR KNOB does not turn smoothly, contact your store of purchase.
- Be sure to set both voltage selectors to same position.

Connecting the AC OUTLET

AC OUTLET
• SWITCHED
This AC outlet is controlled by the power switch and Remote Control Unit.
Maximum capacity is 120 W.

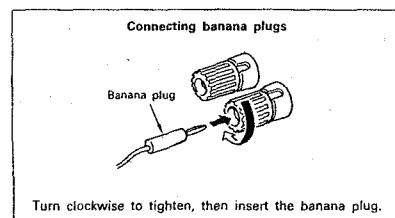
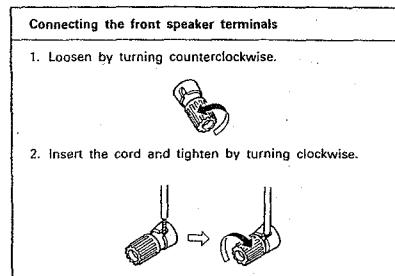
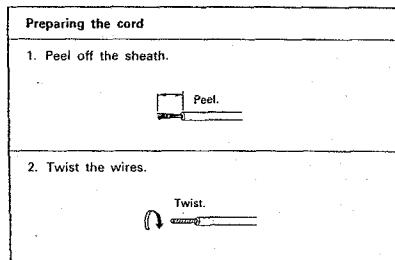
NOTE:

Only use the AC outlet for audio equipment. Never use them for hair dryers, TVs or other electrical appliances.

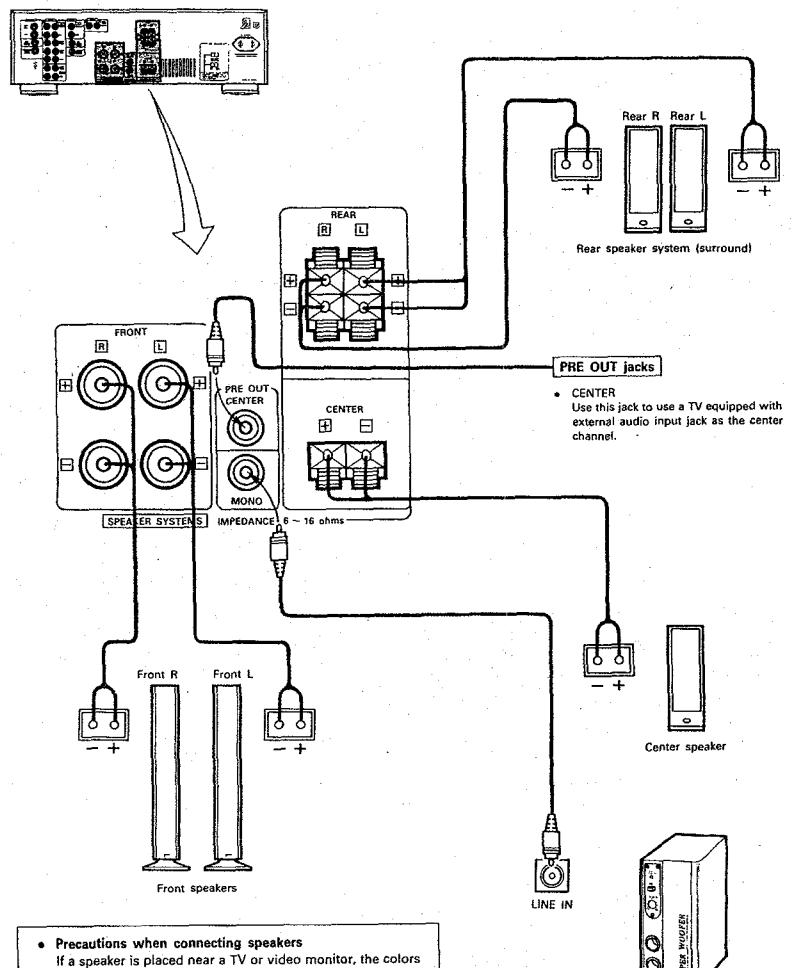
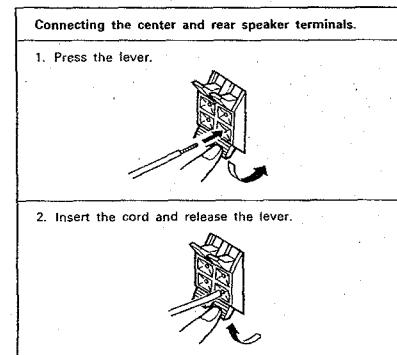
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Speaker System Connections

- This amplifier can accommodate connections of a total of five speakers including one set of front speakers, one set of rear speakers, and one center speaker.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (+ with +, - with -). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.



- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel.
- Speaker Impedance**
 - Speakers with an impedance of 6 to 16 ohms can be connected for use as front, center and rear speakers.
 - Using speakers with an impedance other than the specified one may result in damage. Be sure to use speakers of the specified impedance.

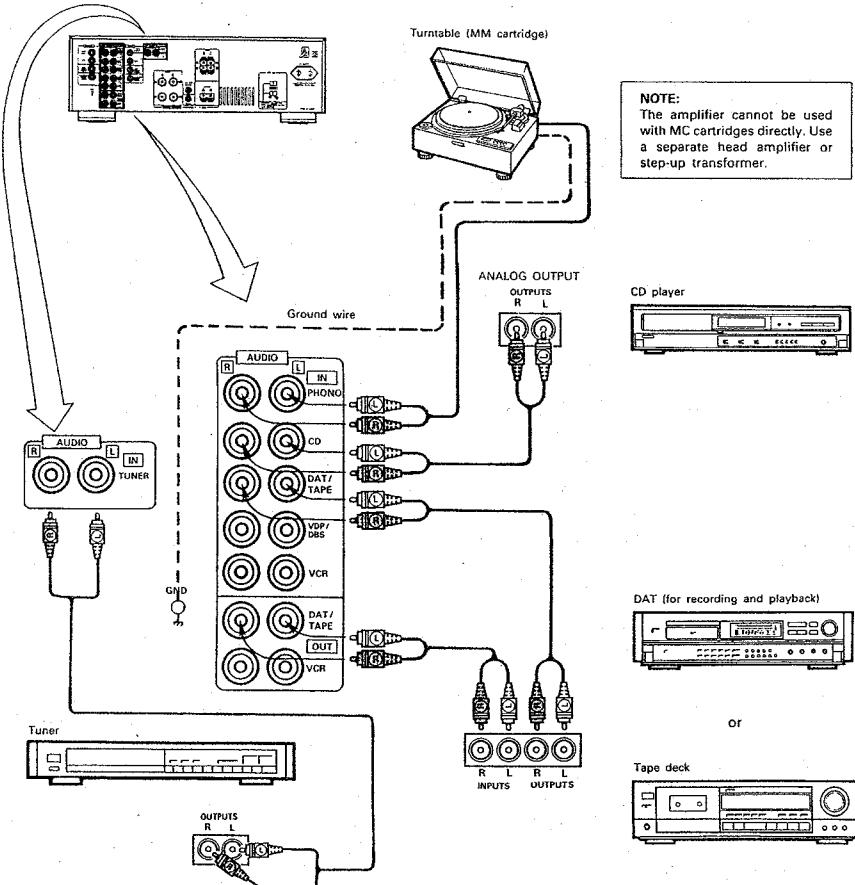
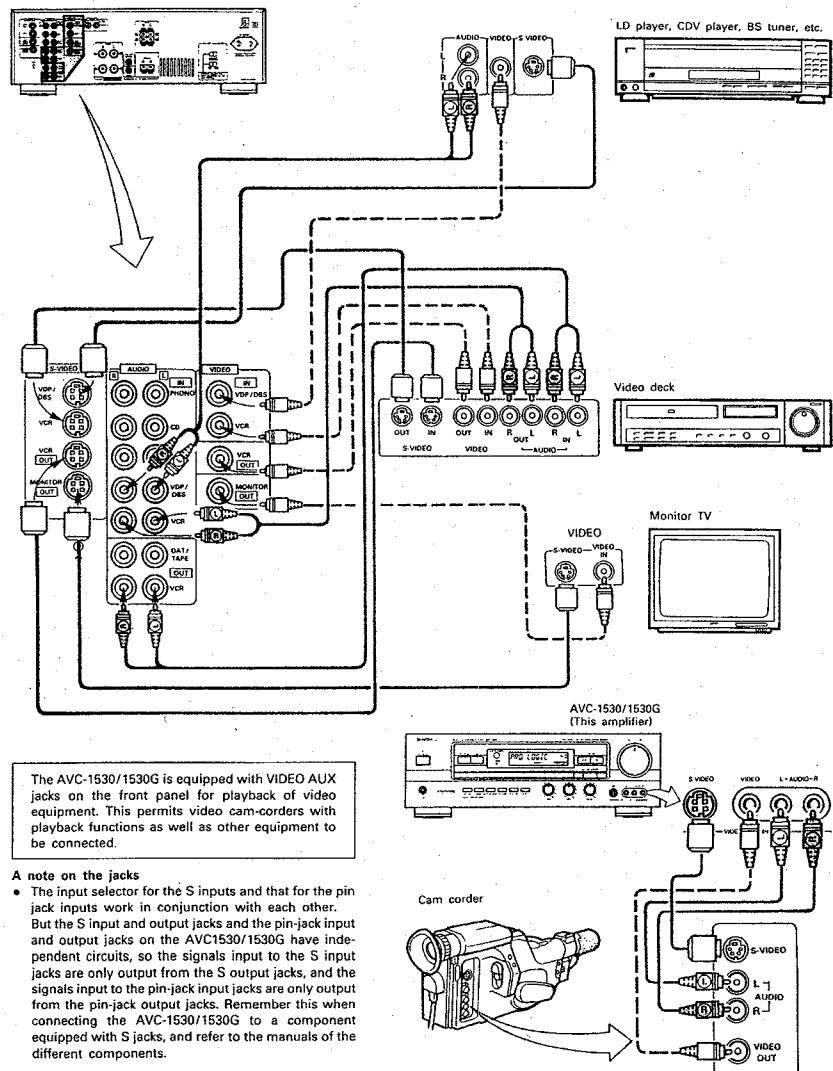


- Precautions when connecting speakers**
If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.

→ Continued

Audio Section

- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.
- If hum or other noise is produced when the ground wire is connected, disconnect it.
- Noise or humming may be generated if a connected component is used independently without turning the power of the AVC-1530/1530G on. If this happens, turn on the power of the AVC-1530/1530G.

**Video Section****A note on the jacks**

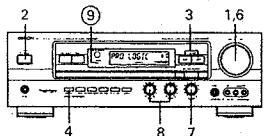
- The input selector for the S inputs and that for the pin jack inputs work in conjunction with each other. But the S input and output jacks and the pin-jack input and output jacks on the AVC1530/1530G have independent circuits, so the signals input to the S input jacks are only output from the S output jacks, and the signals input to the pin-jack input jacks are only output from the pin-jack output jacks. Remember this when connecting the AVC-1530/1530G to a component equipped with S jacks, and refer to the manuals of the different components.

7 PLAYBACK

Preparations for Playback

Check the connections

- Check that all connections are proper, referring to the connections diagrams (pages 9 to 13).



Playing the program source (normal stereo playback)

1. Set the MASTER VOLUME control to the minimum.



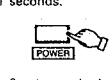
Main unit

2. Press the POWER button to turn the power on.

The muting mode is set for several seconds, after which the STANDBY LED ② flashes for several seconds.



Main unit



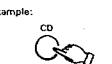
Remote control unit

3. Select the source to be played.

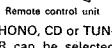
Audio function button

Example:
Main unit
PHONO
↓
CD
↓
TUNER

The source switches as shown above MFD.



Main unit



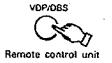
Remote control unit

PHONO, CD or TUNER can be selected directly.

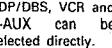
Video function button

Example:
Main unit
VDP/DBS
↓
VCR
↓
V-AUX

The source switches as shown above MFD.



Main unit



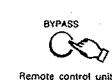
Remote control unit

VDP/DBS, VCR and V-AUX can be selected directly.

4. Press the BYPASS button.



Main unit



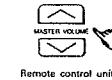
Remote control unit

5. Start playback of the program source. For instructions, refer to the source's operating instructions.

6. Adjust the volume.



Main unit

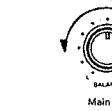


Remote control unit

Turn the control clockwise to increase the volume, counterclockwise to decrease it.

Press the [A] button to increase the volume, the [V] button to decrease it.

7. Adjust the left/right balance.



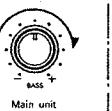
Main unit



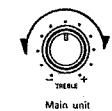
Remote control unit

Turn the control counterclockwise to reduce the volume of the right channel, clockwise to reduce the volume of the left channel.

8. Adjust the tone.



Main unit



Remote control unit

Turn the control clockwise to increase the bass, counterclockwise to decrease it.

Turn the control clockwise to increase the treble, counterclockwise to decrease it.

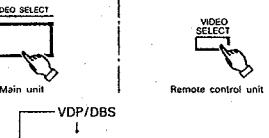
NOTE:

The sound may be interrupted if switches are operated during playback. This is because the muting circuit is activated to prevent switching noise.

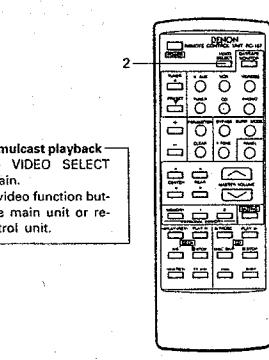
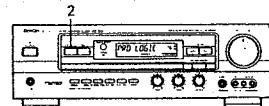
■ Simulcast playback (playing different video and audio sources simultaneously)

1. Follow steps 1 to 3 under "Playing the program source".

2. Select the desired video program source.



3. Follow steps 4 to 8 under "Playing the program source".



Cancelling simulcast playback

- Press the VIDEO SELECT button again.
- Press the video function button on the main unit or remote control unit.

Using the muting function

Use this to turn off the audio output temporarily.

1. Press the MUTING button.



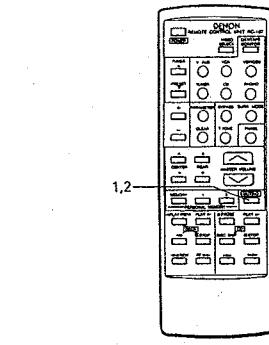
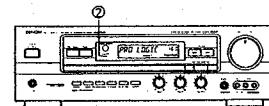
Remote control unit

This function can only be set from the remote control unit.

The STANDBY LED ② flashes when the muting function is set.

2. Press the MUTING button again.

The muting function is cancelled.



8 RECORDING

■ Recording the program source (recording the source currently being monitored)

- Follow steps 1 to 3 under "Playing the program source".
- Start recording on the tape or video deck.

For instructions, refer to the component's operating instructions.

NOTES:

- The audio signals selected with the audio or video function button are output from the DAT/TAPE REC OUT jacks.
- The recording source switches if the audio function, video function, personal memory "1" or "2" buttons are pressed during recording. Do not press these buttons during recording.

Simultaneous recording

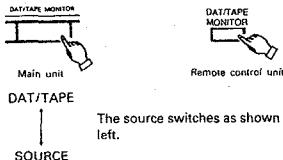
The signals of the source selected with the function selector button are output simultaneously to the DAT/TAPE and VCR REC OUT jacks. If a total of two tape and/or video decks are connected and set to the recording mode, the same source can be recorded simultaneously on both decks.

In addition, if the TAPE MONITOR (DAT/TAPE) button is pressed, the audio signals from the tape deck are output to the VCR AUDIO REC OUT jacks.

■ Monitoring the recording on a three-headed tape deck

The sound actually being recorded can be monitored during recording when a three-headed tape deck is used.

- Select the deck to be monitored.



The source switches as shown at the left.

- Follow steps 1 to 3 under "Playing the program source".

- Start recording on the tape deck. For instructions, refer to the component's operating instructions.

- Press the three-headed tape deck's source/tape button to monitor the recording.

NOTE:

- Also refer to the three-headed tape deck's operating instructions.

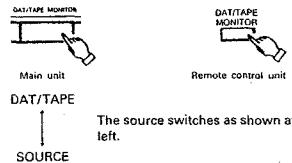
9 TAPE MONITOR FUNCTION

■ When playing a DAT or tape deck

Use this function to switch between the DAT or tape deck and the input (source) selected with the audio or video function buttons.

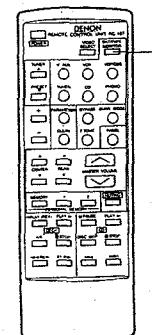
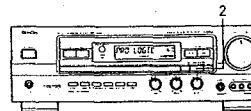
- Follow steps 1 and 2 under "Playing the program source".

- Select the deck to be played.



The source switches as shown at the left.

- Follow steps 5 to 8 under "Playing the program source".



10 USING HEADPHONES

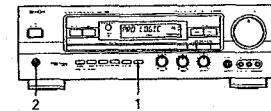
The sound from the speakers can be turned off using the OUTPUT button to listen to the sound over the headphones only, for example at night.

- Press the OUTPUT button.



"H/P ONLY" appears on the MFD.

- Insert the headphones' plug into the PHONES jack.



Cancelling
Either press the OUTPUT button again or press the POWER button to turn the power off.

11 SURROUND PLAYBACK

DSP modes

The AVC-1530/1530G is equipped with a DSP (Digital Signal Processor) for the surround processing of digital signals. The DSP lets you enjoy surround sound with a greater sense of reality to match the listening room or software.

- Surround playback using the DSP:

In these mode, signals are output to the center and rear speakers as well for four- or five-channel playback.

The surround modes are as follows:

| | | |
|---|-----------------|---|
| 1 | Dolby Pro Logic | Use this when playing program sources recorded in Dolby Surround. |
| 2 | Wide Screen | Use this to enjoy program sources with the atmosphere of a movie theater, recorded in Dolby Surround. |
| 3 | Live | Use this to enjoy program sources with the atmosphere of a live performance, recorded in Dolby Surround. |
| 4 | Mono movie | In this mode, a sense of expansion is added to monaural audio sources. This mode is best suited for playing old movies or movie tapes recorded in monaural. |
| 5 | Classic concert | This mode simulates the sound of a large concert hall. It is suited for classical music, etc. |
| 6 | Rock concert | This mode is best for playing rock, popular music, etc. |
| 7 | Stadium | This mode simulates the sound field of an outdoor stadium. |

* These effects may not be very pronounced for some sources.

If this is the case, try other modes, not relying too much on their names, and find the mode you like best.

* To adjust the speaker balance for the different surround modes, first adjust for the Dolby Pro Logic Surround mode as explained on page 22, then use the position of the center level and rear level controls at this time as a guide to adjust the balance for that surround mode.

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Using Dolby Pro Logic Surround

Speaker disposition and the Dolby Pro Logic Center mode

Ideally, center speakers should be used when playing sources in Dolby Pro Logic Surround. Select the center mode according to your speaker system.

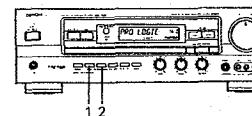
- Set the Dolby Pro Logic mode.



- Select the CENTER mode.

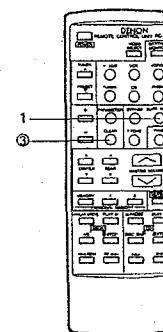


The mode changes as shown above.

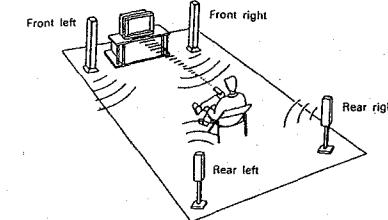
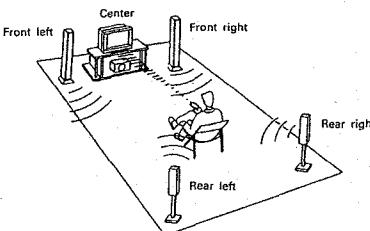


Also select the center mode according to your speaker system when using the Wide Screen and Live modes.

Once the center mode is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button ③ is pressed, the mode changes as shown on the table on Page 27. In this case, reset the center mode.



Center Mode

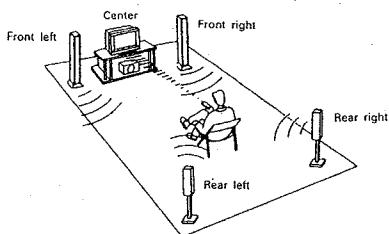


NORMAL mode

Normal mode: This mode is suited for an arrangement in which the center channel speaker is smaller than the left and right speakers. Signals below 100 Hz which have almost no effect on directional orientation are distributed to the left and right channels, whereas the center channel outputs signals greater than 100 Hz. As a result, the bass of the left and right channels increases the apparent deepness of the sound.

PHANTOM mode

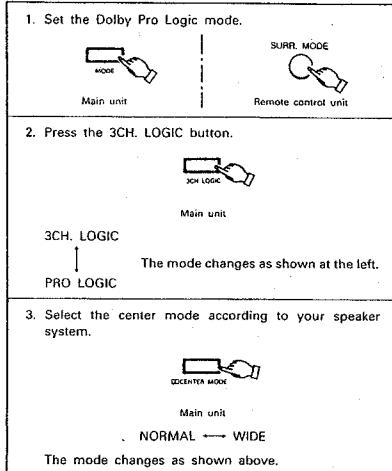
Phantom mode: Use this mode when center channel speaker is not used. A directional emphasis circuit provides signal reproduction which is electrically oriented to the center and this provides an exciting sound field for your enjoyment.

Center Mode**WIDE mode**

Wide mode: This mode is suited for an arrangement in which the center channel speaker is of the same grade as the left and right speakers. The entire sound band from low region to high is output to the center channel to provide an exciting sound field for your enjoyment.

• Dolby 3CH. Logic (three-channel logic mode)

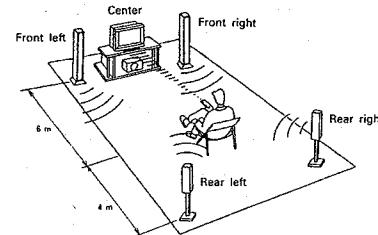
Select this mode when not using rear speakers.

**3CH. LOGIC MODE**

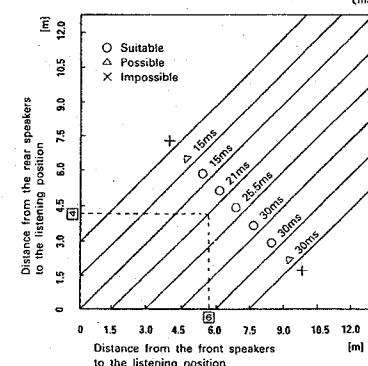
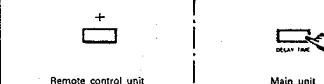
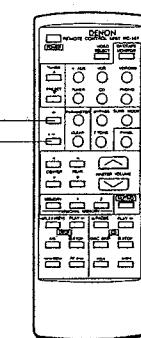
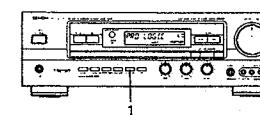
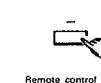
Three-channel logic mode: Use this mode when rear channel speakers are not used. The rear channel information is reproduced by the front speakers.

• Setting the delay time

The optimum delay time will differ depending on the listening position. Referring to the chart at right, set the optimum delay time for your room's space and seating position. For example, when the distance from the front speakers to the listening position is 6 m and that from the rear speakers to the listening position is 4 m, the optimum delay time will be 21 ms. The variable range of the delay time differs depending on the mode. For details about the variable range, see Page 25.



Listening position and optimum delay time for playback with Dolby Pro Logic surround
(ms)

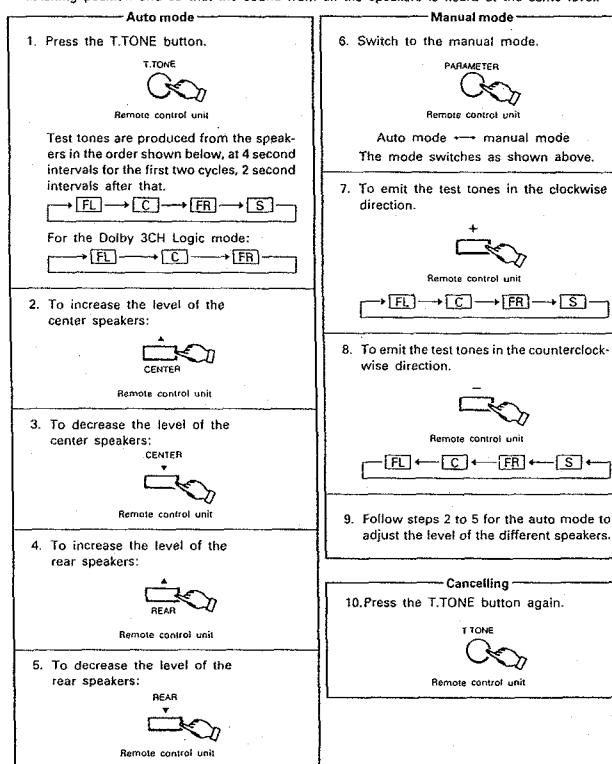
**1. To increase the delay time:****2. To decrease the delay time:**

- The delay time can be set between the range of 15.0ms to 30ms in steps of 1.5ms.
- Once the delay time is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button is pressed, the mode changes as shown on the table on Page 27. In this case, reset the center mode.

→ Continued

• Speaker volume adjustment and Dolby Pro Logic mode

To obtain the maximum surround effect, use the test tones to adjust the volume and balance of the speakers for the best balance for the listening position and so that the sound from all the speakers is heard at the same level.



NOTES:

- When the T.TONE button is pressed, the auto mode is set and test tones are produced starting from the front left channel.
- In the auto mode, the test tone will not move on to the next channel when it is being emitted from the center channel and the level of the center speakers is being adjusted, or when it is being emitted from the rear channel and the level of the rear speakers is being adjusted. It only moves on to the next channel approximately two seconds after the level key has been released.
- When the mode is switched from the auto mode to the manual mode, the test tone is emitted starting from the channel from which it was last being emitted in the auto mode.

The level of the center and rear channels can be adjusted from 0dB to -24dB in steps of 2dB.

Once the level of the center and rear channels is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button is pressed, the mode changes as shown on the table on Page 27. In this case, reset the center mode.

In other surround modes, adjust the balance based on the adjustment made in the Dolby Pro Logic mode. The balance may not be optimum for some sources, so readjust it as necessary.

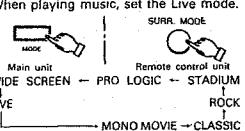
■ Other DSP Surround Modes

• Using the directivity emphasis circuit and DSP surround

Use this to play sources recorded in Dolby Stereo and Dolby Surround with even greater power.

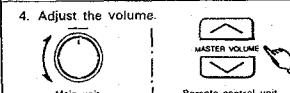
(The directivity emphasis circuit detects the signals with the dominant direction from the level and phase of the left and right channels and produces a sharp acoustic image and sense of direction.)

- When playing movies, set the Wide Screen mode.
When playing music, set the Live mode.



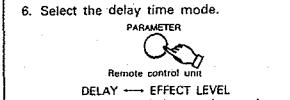
- Set the center mode.
Set to the center mode set in the Dolby Pro Logic mode.

- Start playing the movie or music.



- Adjust the level of the center and rear channels.
Adjust the levels according to the source, using the Dolby Pro Logic settings as reference.

Adjusting the delay time



- Select the delay time mode.
The parameter switches as shown above.

DELAY → EFFECT LEVEL

The parameter switches as shown above.

6. Select the delay time mode.

PARAMETER

DELAY → EFFECT LEVEL

The parameter switches as shown above.

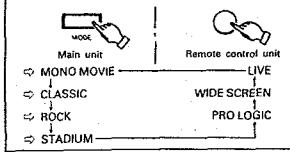
- Set the delay time following the procedure on Page 21.

Other adjustments

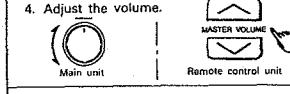
- Follow steps 6 to 8 under "Playing the program source" on Page 14.

• DSP surround playback

- Select the desired surround mode.



- Play the desired program source.

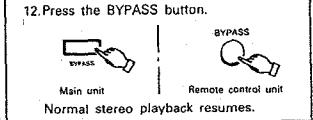


- Adjust the level of the rear channel.
Adjust the level according to the source, using the Dolby Pro Logic settings as reference.

- Adjust the effect level.
Adjust the level in the same way as for the Wide Screen mode above.

- Follow steps 6 to 8 under "Playing the program source" on Page 14.

To turn off the surround mode



Normal stereo playback resumes.

■ Using the Personal Memory

Surround mode settings and the input function can be stored at personal memory buttons "1" and "2", then recalled directly from any surround mode simply by pressing button "1" or "2".

① Storing the setting in the personal memory

- Set the desired surround mode and input function.
- Press the personal memory button.

(The memory setting mode is set and the indicator on the MFD flashes.)
- Press the desired personal memory button ("1" or "2").

Remote control unit
- "M 1 (2) SET" appears on the MFD indicating that the setting has been stored.

NOTE:

- The memory setting mode is set for 6 seconds. If any button other than personal memory button "1" or "2" is pressed, the memory setting mode is cancelled.

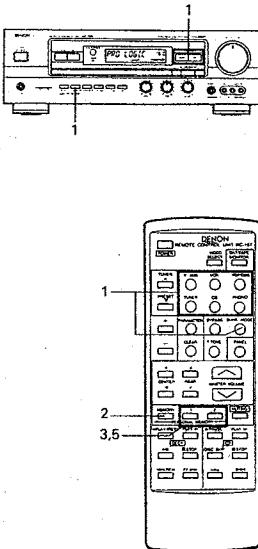
② Recalling the personal memory

- Press the personal memory button ("1" or "2") at which the desired setting was stored.

Remote control unit
- The surround mode and input function switch automatically.

NOTES:

- Personal memory buttons "1" and "2" will not function during the tape monitor mode.
- The surround mode recalled with the PERSONAL MEMORY "1" or "2" button is the same as the mode selected with the surround mode button. Thus, if the parameters of the surround mode which was stored in the memory are cleared, when the mode is recalled it is set to the initial values.
- Upon shipment from the factory, the "WIDE SCREEN" mode is stored at personal memory "1", the "LIVE" mode at personal memory "2". The input function is set to VDP/DBS for both "1" and "2".
- Do not press personal memory buttons "1" or "2" buttons during recording on the cassette deck.



■ Operations Possible in the Various Surround Modes

The following is a list of the buttons and functions which can be operated during the different surround modes. Figures in parentheses indicate adjustment ranges.

| | OUTPUT | CENTER LEVEL | REAR LEVEL | CENTER MODE | 3CH LOGIC | TEST TONE | DELAY TIME |
|--------------------|-----------------|--------------|----------------|----------------|----------------|-----------|-------------|
| BYPASS | O X | X | △ ¹ | X | X | X | X |
| DOLBY PRO LOGIC | NORMAL O | O (0~-24dB) | O (0~-24dB) | O | O | O | O (15~30ms) |
| | PHANTOM O | X | O (0~-24dB) | O | X | O | O (15~30ms) |
| DOLBY 3CH LOGIC | NORMAL O | O (0~-24dB) | O (0~-24dB) | O | O | O | O (15~30ms) |
| | WIDE O | O (0~-24dB) | X | O | O | O | X |
| WIDE SCREEN & LIVE | NORMAL O | O (0~-24dB) | O (0~-24dB) | O | X | X | O (6~30ms) |
| | PHANTOM O | X | O (0~-24dB) | O | X | X | O (6~30ms) |
| MONO MOVIE | O | O (0~-24dB) | O (0~-24dB) | △ ¹ | X | X | X |
| | CLASSIC CONCERT | O | X | O (0~-24dB) | △ ¹ | X | X |
| ROCK CONCERT | O | X | O (0~-24dB) | △ ¹ | X | X | X |
| | STADIUM | O | X | O (0~-24dB) | △ ¹ | X | X |

| | EFFECT LEVEL | CLEAR | PERSOINAL ² | DAT/TAPE MONITOR |
|--------------------|------------------|----------|------------------------|------------------|
| BYPASS | X | O | X | O |
| DOLBY PRO LOGIC | NORMAL X | O | O | O |
| | PHANTOM X | O | O | O |
| DOLBY 3CH LOGIC | NORMAL X | O | O | O |
| | WIDE X | O | O | O |
| WIDE SCREEN & LIVE | NORMAL O (5~15) | O | O | O |
| | PHANTOM O (5~15) | O | O | O |
| MONO MOVIE | O (5~15) | O | O | O |
| | CLASSIC CONCERT | O (5~15) | O | O |
| ROCK CONCERT | O (5~15) | O | O | O |
| | STADIUM O (5~15) | O | O | O |

O: Operation possible
X: Operation not possible

¹ Switches to the Dolby Pro (3CH) Logic mode for any modes other than Dolby Pro (3CH) Logic, Wide Screen and LIVE.

² Personal memory buttons MEMORY "1" and "2" will not function during the DAT/tape monitor mode.

- The sound may be distorted for some sources if the rear level or effect level is raised during surround playback. If this happens, lower the rear level and effect level.

12 LAST FUNCTION MEMORY

- This amplifier is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off. This function eliminates the need to perform complicated resetting when the power is switched on.
- This amplifier is also equipped with a back-up memory. This function provides approximately one week of memory storage with the power cord disconnected.

13 TROUBLESHOOTING

If a problem should arise, first check the following:

1. Are the connections correct?
2. Have you operated the amplifier according to the Operating Instructions?
3. Are the speakers, turntable, and other components operating properly?

If the amplifier is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

| | Symptom | Cause | Measures | Page |
|--|---|--|---|--------------------------------|
| Common problems arising when listening to the CD, records, tapes, etc. | MFD not lit and sound not produced when power switch set to on. | <ul style="list-style-type: none"> Power cord not plugged in securely. | <ul style="list-style-type: none"> Check the insertion of the power cord plug. | 8 |
| | MFD lit but sound not produced. | <ul style="list-style-type: none"> Speaker cords not securely connected. • OUTPUT button is off. Improper position of the audio function button. Volume control set to minimum. MUTING is on. | <ul style="list-style-type: none"> Connect securely. Press the OUTPUT button. Set to a suitable position. Turn volume up to suitable level. Switch off MUTING. | 10, 11 17 14 14 15 |
| | -PROTECT- display appears multi-function display. | <ul style="list-style-type: none"> Speaker terminals are short-circuited. Block the ventilation holes of the set. The unit is operating at continuous high power conditions and/or inadequate ventilation. | <ul style="list-style-type: none"> Switch power off, connect speakers properly, then switch power back on. Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on. Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on. | 10, 11 3, 4 3, 4 |
| | Sound produced only from one channel. | <ul style="list-style-type: none"> Incomplete connection of speaker cords. Incomplete connection of input/output cords. Left/right balance is off. | <ul style="list-style-type: none"> Connect securely. Adjust balance knob properly. | 10, 11 12, 13 14 |
| | Positions of instruments reversed during stereo playback. | Reverse connections of left and right speakers or left and right input/output cords. | Check left and right connections. | 12, 13 |
| | Sound seems distorted. | <ul style="list-style-type: none"> Effect level parameter is high. Rear level is too high. | <ul style="list-style-type: none"> Set the effect level parameter to lower level. Set the rear level to lower level. | 22, 23 22, 23 |
| | Sound seems strange. | DSP parameter settings are poor. | Press the CLEAR button then adjust the DSP parameters. | 22, 23, 27 |
| | Personal memory function does not work. | DAT/tape monitor mode set. | Press the DAT/TAPE button to set the source. | 16 |
| | Humming noise produced when record is playing. | <ul style="list-style-type: none"> Ground wire of turntable not connected properly. Incomplete PHONO jack connection. TV or radio transmission antenna nearby. | <ul style="list-style-type: none"> Connect securely. Contact your store of purchase. | 12 12 - |
| | Howling noise produced when volume is high. | <ul style="list-style-type: none"> Turntable and speaker systems too close together. Floor is unstable and vibrates easily. | <ul style="list-style-type: none"> Separate as much as possible. Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available). | - |
| Sound is distorted. | <ul style="list-style-type: none"> Stylus pressure too weak. Dust or dirt on stylus. Cartridge defective. | <ul style="list-style-type: none"> Apply proper stylus pressure. Check stylus. Replace cartridge. | - | |
| Volume is weak. | MC cartridge being used. | <ul style="list-style-type: none"> Replace with MM cartridge or use a head amplifier or step-up transformer. | 12 | |
| Amplifier does not operate properly when remote control unit is used. | <ul style="list-style-type: none"> Batteries dead. Remote control unit too far from amplifier. Obstacle between amplifier and remote control unit. Different button is being pressed. • and ends of battery inserted in reverse. | <ul style="list-style-type: none"> Replace with new batteries. Move closer. Remove obstacle. Press the proper button. Insert batteries properly. | 6 6 6 6 6 | |

14 INITIALIZATION OF THE MICROPROCESSOR

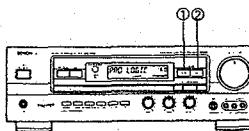
When the indication of the MFD display is not normal or when the operation of the unit does not show the reasonable result, the initialization of the microprocessor is required by the following procedure.

1. Switch off the unit and remove the AC power cord from the wall outlet.
2. Hold the following 2 buttons of the main unit at the same time (as illustrated in the diagram below, ① AUDIO FUNCTION button, ② VIDEO FUNCTION button, and plug the power cord into the outlet.

3. Check that the entire MFD display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons.

4. Switch on the unit and the microprocessor will be initialized. The input function is set to tuner with the bypass mode automatically.

NOTE: • When the unit does not show the result of above 3 and 4, repeat the procedure from 1 again.
• When the microprocessor is initialized, all settings you have made are reset to the factory presettings.



Initial parameter values for the different modes

| | OUTPUT | FRONT SP | CENTER SP/PRE | REAR SP | CENTER LEVEL | REAR LEVEL | CENTER MODE | 3CH LOGIC | TEST TONE | DELAY TIME | EFFECT LEVEL |
|-----------------|--------|----------|---------------|---------|--------------|------------|-------------|-----------|-----------|------------|--------------|
| BYPASS | ON | ON | OFF | OFF | — | — | — | — | — | — | — |
| DOLBY PRO LOGIC | ON | ON | ON | ON | -12dB | -12dB | NORMAL | OFF | OFF | 21msec | — |
| WIDE SCREEN | ON | ON | ON | ON | -12dB | -12dB | NORMAL | — | — | 21msec | 10 |
| LIVE | ON | ON | ON | ON | -12dB | -12dB | NORMAL | — | — | 21msec | 10 |
| MONO MOVIE | ON | ON | OFF | ON | — | -12dB | — | — | — | — | 10 |
| CLASSIC | ON | ON | OFF | ON | — | -12dB | — | — | — | — | 10 |
| ROCK | ON | ON | OFF | ON | — | -12dB | — | — | — | — | 10 |
| STADIUM | ON | ON | OFF | ON | — | -12dB | — | — | — | — | 10 |

SP: SPEAKER OUT
PRE: PRE OUT

- INPUT FUNCTION : TUNER
- PERSONAL MEMORY 1
INPUT : VDP/DBS
SURROUND MODE : WIDE SCREEN
- PERSONAL MEMORY 2
INPUT : VDP/DBS
SURROUND MODE : LIVE

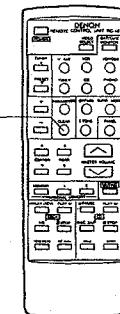
■ Initialization of the Individual Modes

Use this to set the adjusted values back to the factory preset values.

1. Press the CLEAR button.

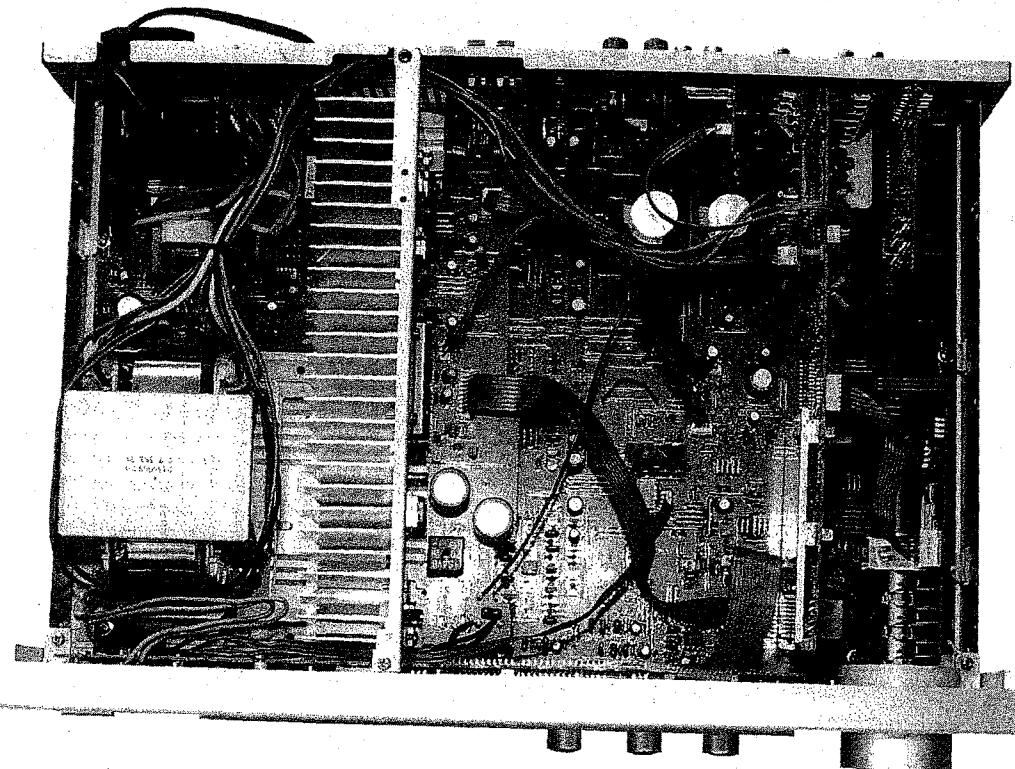
Remote control unit

The values for the currently selected mode only are reset to the values shown on the above table.



WIRE ARRANGEMENT

In case of wires require unclasping or loosening to move the location to perform adjustment or part replacement, be sure to rearrange them neatly to restore properly in the same location as they were originally placed, or causing to produce a noise may occasionally occur.



DISASSEMBLY

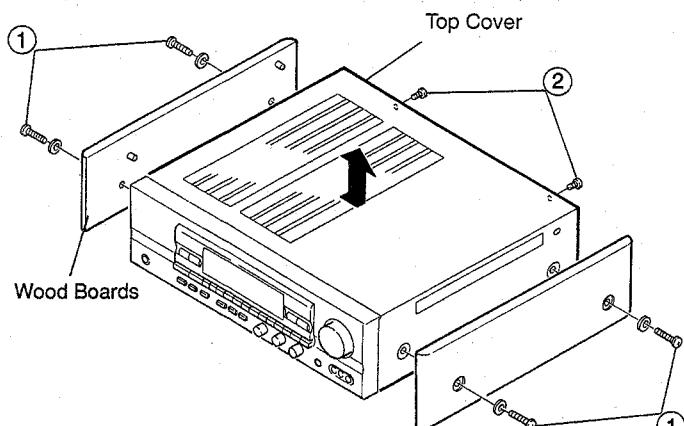
(To reassemble reverse disassembly)

1. Wood Boards (AVC-1530G only)

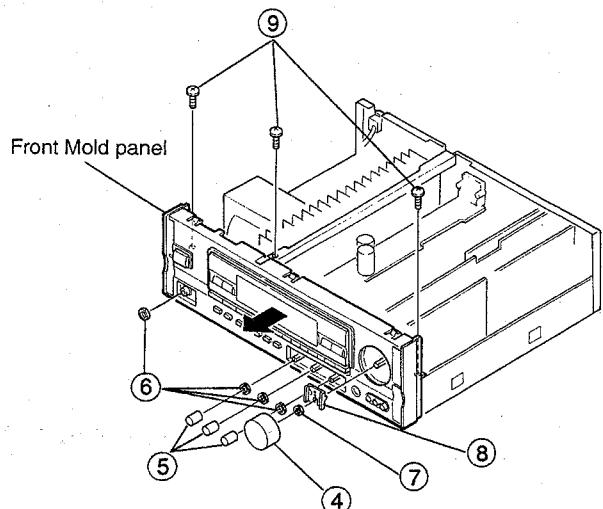
Remove 4 screws ①.

2. Top Cover

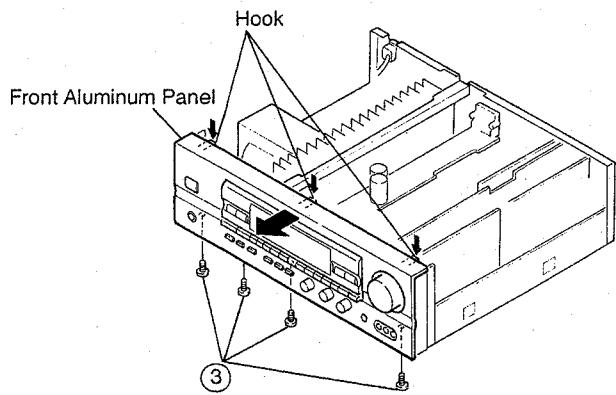
Remove 2 screws ②.

**4. Front Mold Panel**

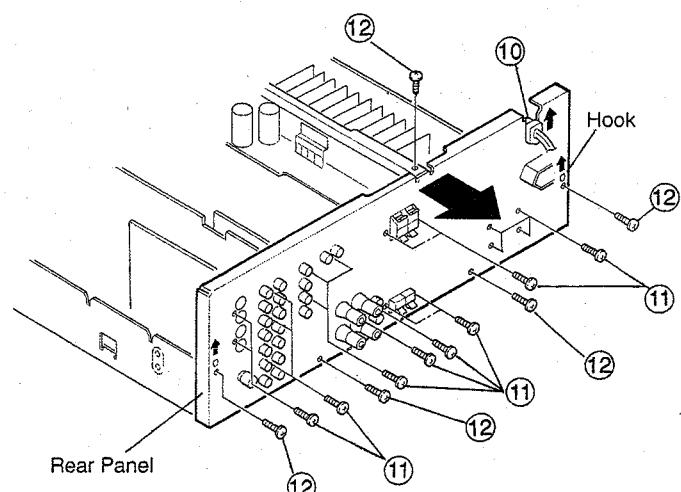
- (1) Pull out Master Volume knob ④ and 3 round knobs ⑤.
- (2) Remove 4 nut ⑥ and nut ⑦ and remove bracket ⑧.
- (3) Remove 3 screws ⑨.

**3. Front Aluminium Panel**

Remove 4 screws ③ and undo hooks at 3 places.

**5. Rear Panel**

- (1) Disconnect cord bush ⑩
- (2) Remove 18 screws ⑪ and 5 screws ⑫
- (3) Remove hooks at 2 places in arrow direction.



ADJUSTMENT

● Initiating (Memory clearing) Method

To clear memory contents of microcomputer and restore to the initial state, take the following steps;

1. Press power switch, turn off power of the unit, and set to standby mode.
2. Pull out power cord from wall outlet temporarily.
3. Insert power cord into outlet while simultaneously pressing two keys of AUDIO and VIDEO.
4. Press power switch to confirm that memory contents are cleared.

By completion of the above, the initial state is restored. In case the memory can not be cleared due to some reasons, repeat steps 1 through 3.

● AUDIO SECTION

Idling Current (1U-2615-1)

Required measurement equipment: DC Voltmeter

Arrangement

- (1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15°C ~ 30°C.
(59°F ~ 86°F).

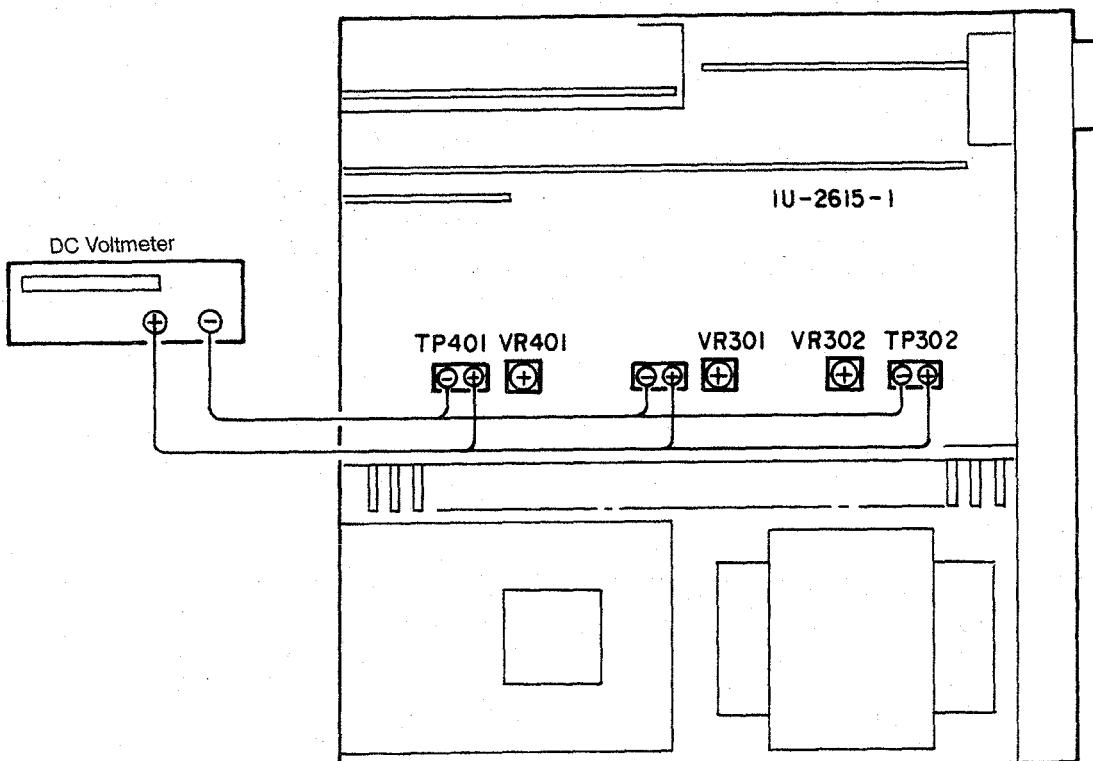
(2) Presetting

- | | |
|---|--|
| ● POWER (Power source switch) | → OFF |
| ● MODE (Mode button) | → BY PASS |
| ● FUNCTION (Function button) | → CD |
| ● VOLUME (Volume control) | → 0: fully counterclockwise (\odot min.) |
| ● CENTER VOLUME (Center volume control) | → -12dB |
| ● BASS, TREBLE (Tone control) | → 0: (Controls to center) |
| ● SPEAKERS (Speaker terminal) | → No load (Do not connect speaker, dummy resistor, etc.) |

Adjustment

- (1) Remove top cover and set VR401, VR301 and VR302 of 1U-2615-1 (Main Unit) at counterclockwise fully.
- (2) Connect DC Voltmeter to test points (Lch T.P.302, Rch T.P.301, CENTER ch T.P.401).
- (3) Connect power cord to AC Line, and turn power switch "ON".
- (4) Allow 15 minutes, and turn VR301, VR302 and VR401 clockwise (\odot) and adjust the TEST POINTS voltage to 1.5 mV ± 0.5 mV DC.
- (5) After 2 minutes from preset, turn VR301, VR302 and VR401 to set the voltage to 3 mV ± 0.5mV DC.

1U-2615-1 Main Unit (Component Side)



SEMICONDUCTORS

IC's

Note)

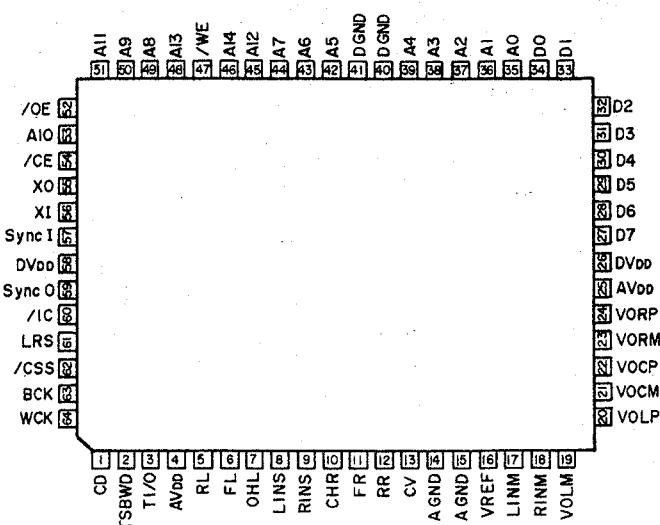
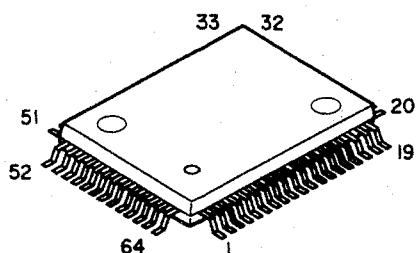
Indications before IC numbers denote P.W.B. Name.

MA : Main Amp P.W.B. Unit

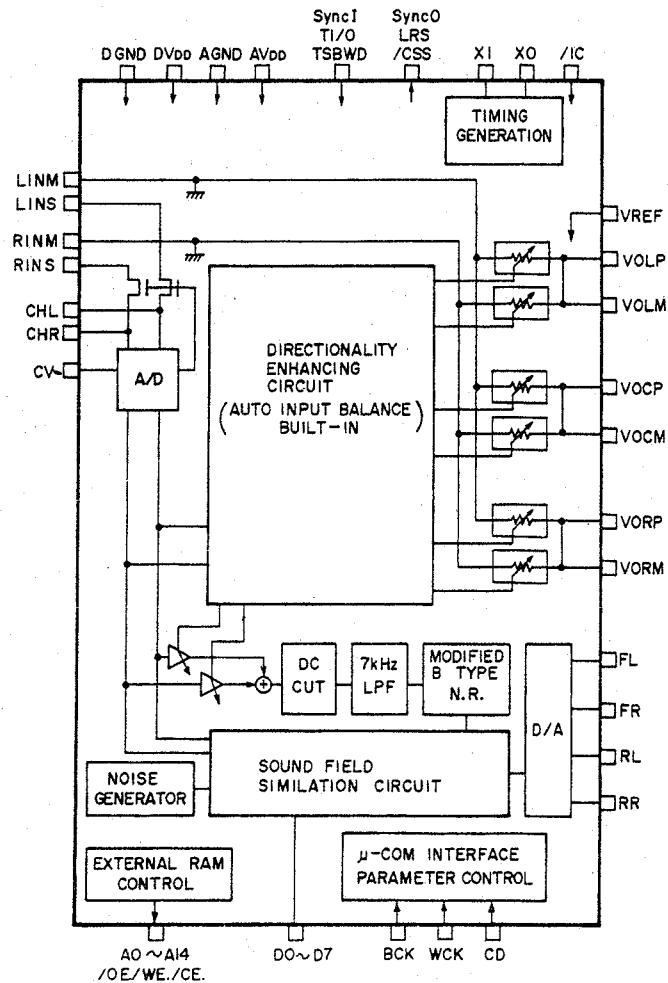
RE : Rear Amp P.W.B. Unit

SU : Surround P.W.B. Unit

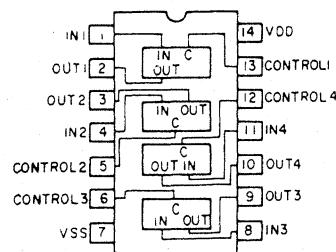
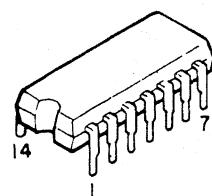
F71002B
(SU: IC106)



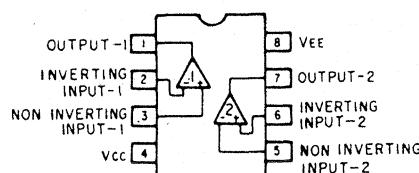
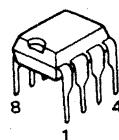
BLOCK DIAGRAM



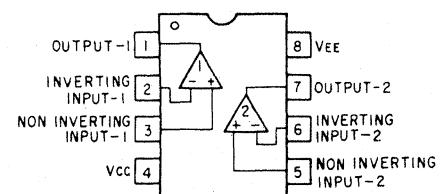
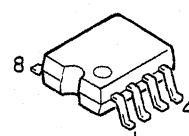
LC4966
(SU: IC103)



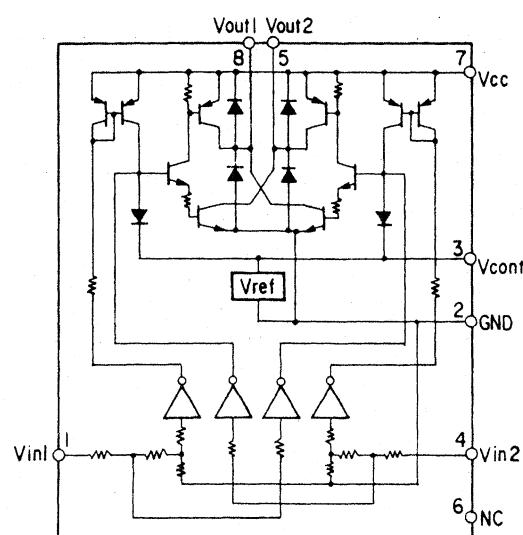
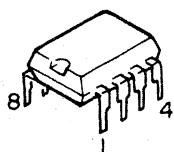
BA4558
(MA: IC451)



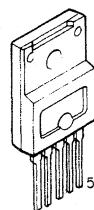
BA4558F (SU: IC101, 104, 105,
115 ~ 117, 253, 255, 257)
NJM2082M (SU: IC109, 110, 113, 114)
NJM5532MD (SU: IC111, 112)



LB1639 (SU: IC255)



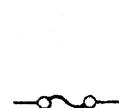
SI-18752 (RE: IC501, 502)



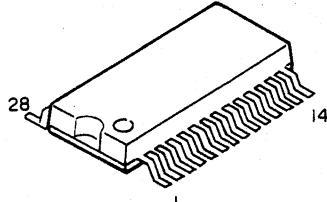
- 1. +IN
- 2. -IN
- 3. -V_{EE}
- 4. Output
- 5. +V_{CC}

• IC PROTECTORS

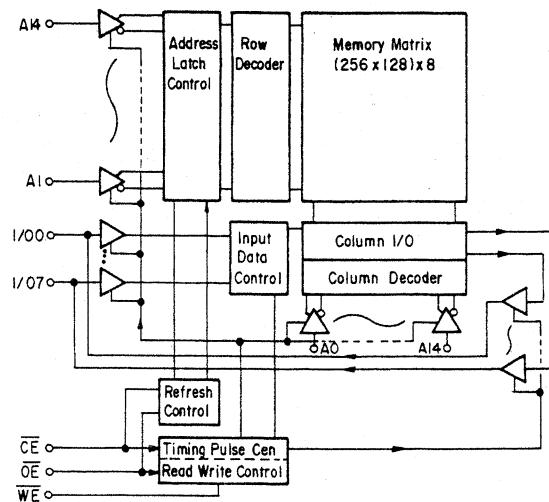
ICP-N15 (RE: IC552, 603)
ICP-N20 (RE: IC505, 506)



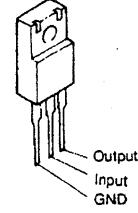
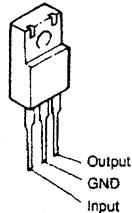
**HM65256BLFP-10T
(SU: IC107)**



| | |
|-----------|---------|
| A14 [1] | 28 Vcc |
| A12 [2] | 27 WE |
| A7 [3] | 26 A13 |
| A6 [4] | 25 A8 |
| A5 [5] | 24 A9 |
| A4 [6] | 23 A11 |
| A3 [7] | 22 OE |
| A2 [8] | 21 A10 |
| A1 [9] | 20 CE |
| A0 [10] | 19 I/07 |
| I/00 [11] | 18 I/06 |
| I/01 [12] | 17 V05 |
| I/02 [13] | 16 I/04 |
| I/03 [14] | 15 I/03 |
| Vss [14] | |

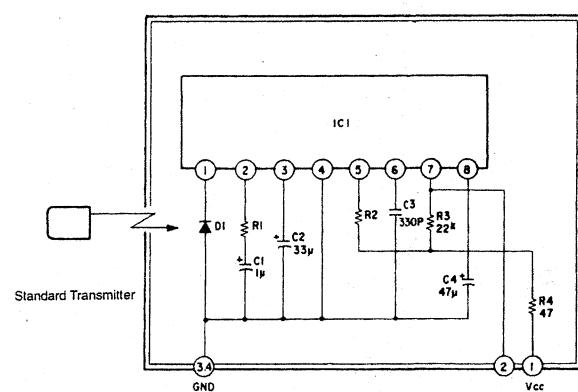
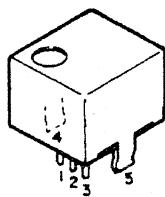


**NJM7805FA(S) (RE: IC507, 602)
NJM7815FA(S) (RE: IC503)
NJM7806FA(S) (RE: IC551)**



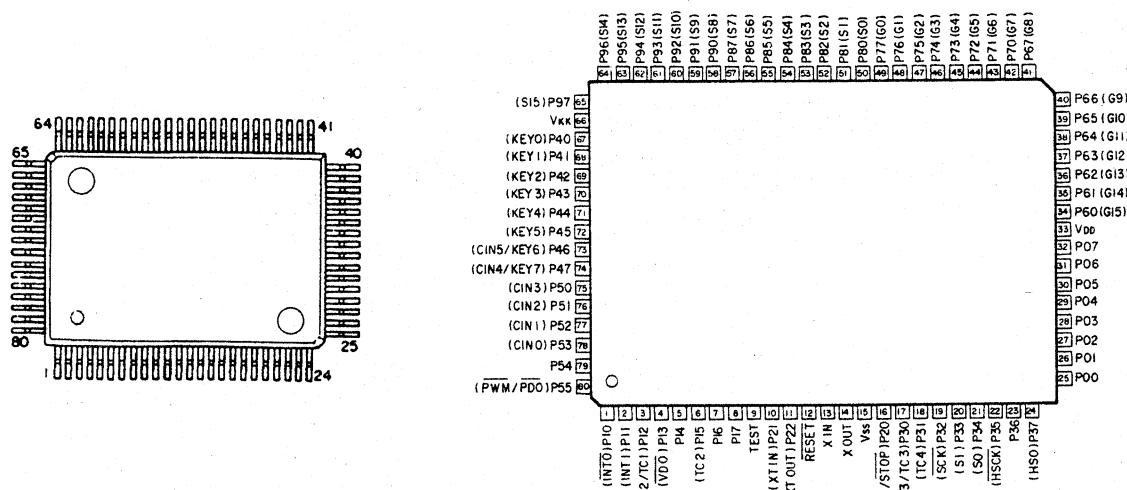
NJM7915FA (RE: IC504)

● **OTHERS**
**SBX1610-52 (Remote Control Receiver)
(RE: IC701)**



1. Vcc
2. Output
3. GND
4. Case fin
5. Case fin

| | |
|----------------------------|------------------------------------|
| IC1 | : CX20106A chip |
| D1 | : Pin photodiode chip |
| C1; C2, C4 | : Aluminum electrolytic capacitor |
| C3 | : SL characteristic ± 5% |
| R1 | : Gain control resistor |
| R2 | : fo control resistor (using ± 1%) |
| R (Other than above items) | : ± 5% |

TMP87CK70AF
(MA:IC801)

TMP87CK70AF Port Allocation Table Table 1 (1/4)

| Pin | Terminal Name | I/O | Logic | Initial Setting | Usage |
|-----|-----------------|-----|--------|-----------------|---|
| 1 | P10(INT0) | I | L* | — | Power breakdown; Breakdown detect input (*L at Breakdown) |
| 2 | P11(INT1) | I | L* | — | PROTECTION: PROTECTION INPUT (*H at detect mode) |
| 3 | P12(INT2/TC1) | O | Serial | L | ST TUNER PLL Control (LM7001) |
| 4 | P13(DV0) | O | H* | L | TUNER MUTE (*H at MUTE mode) |
| 5 | P14 | I | L* | — | TUNED SIGNAL input (*L at reception mode) |
| 6 | P15(TC2) | I | L* | — | STEREO SIGNAL input (*L at stereo reception mode) |
| 7 | P16 | O | L* | L | (ST / MONO ; STEREO / MONO SHIFT (*L at stereo mode) |
| 8 | P17 | O | — | L | Not used |
| 9 | TEST | I | — | — | Connect to GND |
| 10 | P21(XTIN) | O | — | L | Not used |
| 11 | P22(XTOUT) | O | — | L | Not used |
| 12 | RESET | I | L | — | RESET; Microcomputer reset Input |
| 13 | XIN | I | — | — | Oscillator connection (8MHz) |
| 14 | XOUT | I | — | — | — |
| 15 | Vss | PW | — | — | 0V (GND) |
| 16 | P20 (INT5/STOP) | O | — | L | Not used |
| 17 | P30 (INT3/TC3) | I | L | — | REMOTE: REMOTE controller optical signal input (*H at reset mode) |
| 18 | P31(TC4) | O | H | L | FL-RS FL Driver control (MSC 1937) |
| 19 | P32(SCK) | O | H | H | PL-DATA |
| 20 | P33(SI) | O | H | H | FL-CLK |

*In AVR mode, ports within frame takes setting contents of Table 1-1.

In each mode, unused ports are set to output ports depending on contents of initial setting. (P. ON state)

Table 1 (2/4)

| Pin | Terminal Name | I/O | Logic | Initial Setting | Usage |
|-----|---------------|-----|-------|-----------------|--|
| 21 | P34(SO) | O | L | L/H | IC : DSP Initial clear (*L at reset mode) |
| 22 | P35(HSCK) | O | H | L/H | BCK |
| 23 | P36 | O | H | L | WCK } DSP Control (F71002B) |
| 24 | P37(HSO) | O | H | L/H | CD } |
| 25 | P00 | O | H | L | CK } |
| 26 | P01 | O | H | L | CE } Audio Input/Output, Surround |
| 27 | P02 | O | H | L | DATA } (LC7821,7822) |
| 28 | P03 | O | H | L | CK } |
| 29 | P04 | O | H | H | DATA } Electronic Volume control (TC9176P) |
| 30 | P05 | O | H | L | ST1 } CENTER CH |
| 31 | P06 | O | — | L | Not used |
| 32 | P07 | O | L* | L/H | DSP POWER : DSP POWER ON/OFF (*H at ON) |
| 33 | Vdd | PW | — | — | +5V |
| 34 | P60(G15) | O | H | L | VOL UP } Motor drive control |
| 35 | P61(G14) | O | H | L | VOL DOWN } (LB1639) |
| 36 | P62(G13) | O | H* | H | LED : STANDBY LED (*H at lit time) |
| 37 | P63(G12) | O | L* | H | VCR-1 NH (*H at inhibit mode) |
| 38 | P64(G11) | O | — | L | Not used |
| 39 | P65(G10) | O | — | L | Not used |
| 40 | P66(G9) | O | — | L | Not used |

*In AVR mode, ports within frame are set to output ports and set to "L".

In each mode, unused ports are set to output ports depending on contents of initial setting. (P. ON state)

Table 1 (3/4)

| Pin | Terminal Name | I/O | Logic | Initial Setting | Usage |
|-----|---------------|-----|-------|-----------------|------------------------------------|
| 41 | P67(G8) | O | — | L | Not used |
| 42 | P70(G7) | O | — | L | Not used |
| 43 | P71(G6) | O | — | L | Not used |
| 44 | P72(G5) | O | H | L | FRONT : Speaker relay control |
| 45 | P73(G4) | O | — | L | Not used |
| 46 | P74(G3) | O | H | L | SP-REAR : Speaker relay control |
| 47 | P75(G2) | O | H | L | SP-CENTER : Speaker relay control |
| 48 | P76(G1) | O | H | L | H/R, PRE MUTE : Premute control |
| 49 | P77(G0) | O | L* | H | H/R, PRE MUTE : ("L" at Mute mode) |
| 50 | P80(S0) | O | H | L | POWER : Power relay control |
| 51 | P81(S1) | O | — | L | Not used |
| 52 | P82(S2) | O | — | L | Not used |
| 53 | P83(S3) | O | — | L | Not used |
| 54 | P84(S4) | O | — | L | Not used |
| 55 | P85(S5) | O | — | L | Not used |
| 56 | P86(S6) | O | — | L | Not used |
| 57 | P87(S7) | O | — | L | Not used |
| 58 | P90(S8) | O | — | L | Not used |
| 59 | P91(S9) | O | — | L | Not used |
| 60 | P92(S10) | O | — | L | Not used |

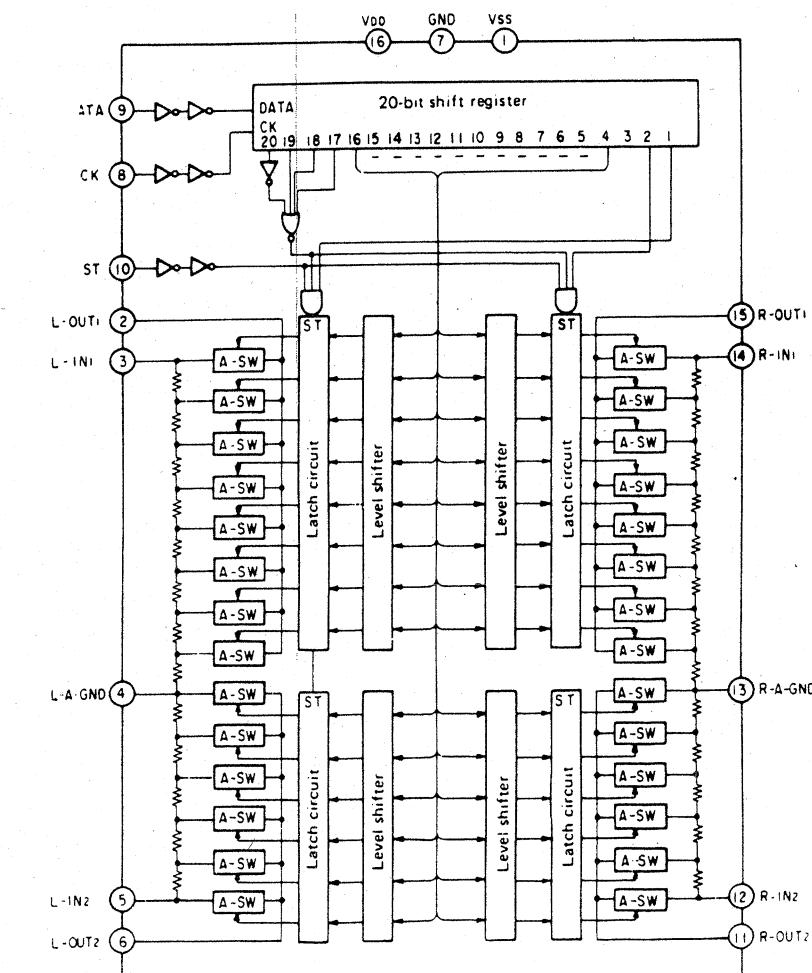
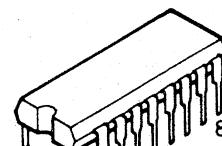
* In each mode, unused ports are set to output ports depending on contents of initial setting. (P.ON State)

| Pin | Terminal Name | I/O | Logic | Initial Setting | Usage |
|-----|----------------|-----|--------|-----------------|---|
| 61 | P93(S11) | O | — | L | Not used |
| 62 | P94(S12) | O | — | L | Not used |
| 63 | P95(S13) | O | — | L | Not used |
| 64 | P96(S14) | O | — | L | Not used |
| 65 | P97(S15) | O | — | L | Not Used |
| 66 | Vkk | PW | — | — | VKK -15V |
| 67 | P40(KEY0) | O | L | H | VIDEO INPUT CONTROL |
| 68 | P41(KEY1) | O | L | H | (BA7625, 7626) |
| 69 | P42(KEY2) | O | L | H | VIDEO REC OUT CONTROL |
| 70 | P43(KEY3) | O | L | H | (BA7625, 7626) |
| 71 | P44(KEY4) | O | L | H | VIDEO INPUT/REC CONTROL |
| 72 | P45(KEY5) | O | — | L | Not Used |
| 73 | P46(CIN5/KEY6) | O | — | L | Not Used |
| 74 | P47(CIN4/KEY7) | I | — | — | MODE : AVC/AVR shift (A/D conversion input) |
| 75 | P50(CIN3) | I | — | — | Key 4 |
| 76 | P51(CIN2) | I | — | — | Key 3 |
| 77 | P52(CIN1) | I | — | — | Key 2 (A/D conversion input) |
| 78 | P53(CIN0) | I | — | L | Key 1 |
| 79 | P54 | O | Serial | L | CK : TUNER PLL CONTROL (LM7001) |
| 80 | P55(PWM/PD0) | O | Serial | — | DATA: TUNER PLL Control (LM7001) |

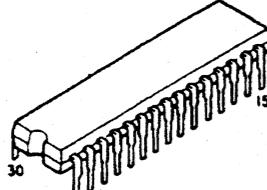
* In AVR mode, ports within frame takes setting contents of Table 1-1.

In each mode, unused ports are set to outputs ports depending on contents of initial setting. (P. ON state)

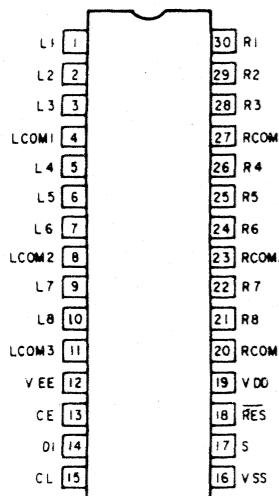
TC9176P (SU: IC251)



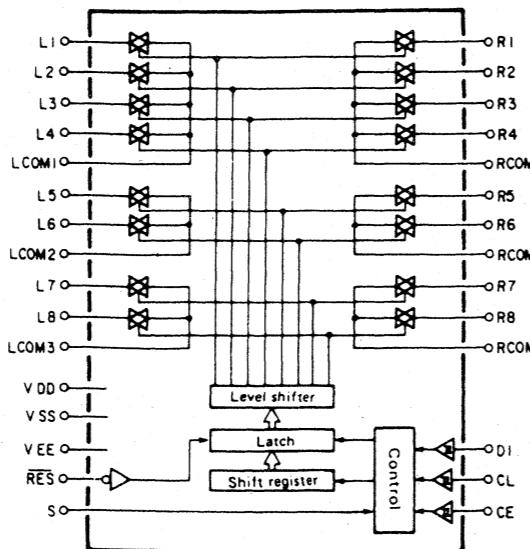
LC7821 (SU: IC102)
LC7823 (SU: IC108)



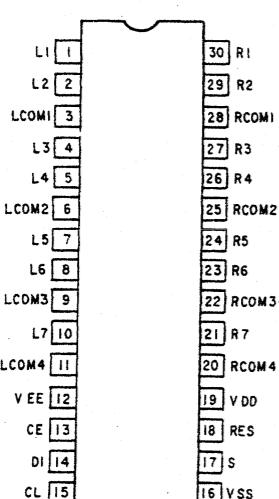
LC7821



LC7821



LC7823



LC7823

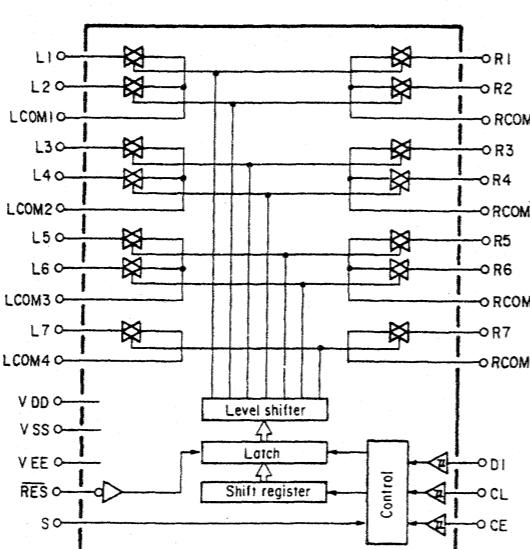
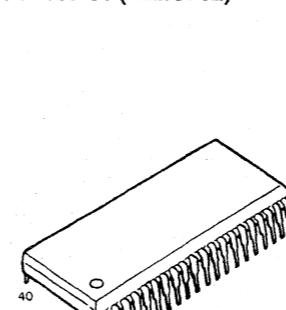


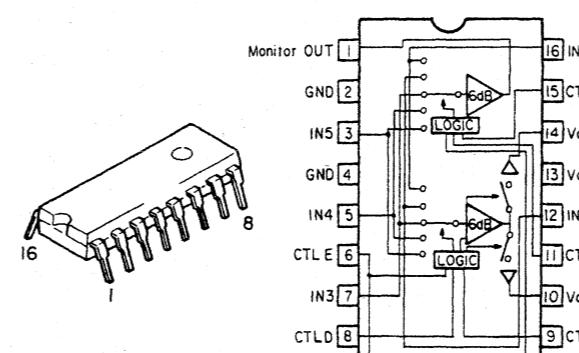
Table of LC7821, LC7823 Terminal Function

| Name of Terminal | I/O | Equivalent Internal Circuit | Function of Terminal |
|---|-----|-----------------------------|---|
| Vdd, Vss, VEE | | | Power terminal. |
| L1 ~ L8, R1 ~ R8 LCOM1 ~ LCOM4, RCOM1 ~ RCOM4 | | Refer to block diagram | In/Out terminal of analog switch. |
| CL, DI, CE | I | | Serial data input terminal (Schmidt buffer). CL = Clock input terminal. DI = Data input terminal. CE = Chip enable terminal. |
| S | I | | Selection terminal for using of two. Address will be shifted as per below table when switching S terminal to L or H. |
| RES | I | | Reset terminal. Condition of analog switch is not fixed at the time of turning on the power. When shift this terminal to L, all analog switches become OFF. |

MSC1937-01 (RE:IC702)



| Pin No. | Terminal Function |
|---------|--------------------|
| 1 | Power Supply (+5V) |
| 3 | Digit 1 Output |
| 17 | Digit 17 Output |
| 18 | GND |
| 19 | — |
| 20 | POWER-ON-RESET |
| 21 | Data Input |
| 22 | Shift Clock Input |
| 23 | Segment a Output |
| 38 | Segment h Output |
| 39 | — |
| 40 | POINT Output |

BA7625 (RE: IC601, 651)
BA7626 (RE: IC652)

| A | B | E | MONITOR OUT |
|---|---|---|-------------|
| L | L | * | IN 1 |
| H | L | * | IN 2 |
| L | H | * | IN 3 |
| H | H | L | IN 4 |
| H | H | H | IN 5 |

| C | D | E | V OUT 1 |
|---|---|---|---------|
| L | L | * | — |
| H | L | * | IN 2 |
| L | H | * | IN 3 |
| H | H | L | IN 4 |
| H | H | H | IN 5 |

Note 1: * mark means that feasible for either H or L.

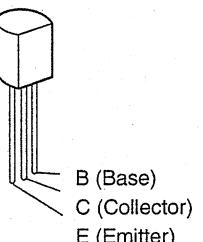
Note 2: Each input terminal is provided with sink chip clamp. (BA7625)

Each input terminal takes 20kohm at the end. (BA7626)

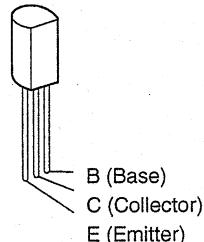
Truth value table

● TRANSISTORS

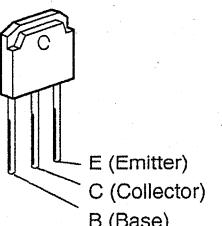
2SA970 (BL)
2SA988 (E/F)
2SC1015 (GR)
2SC1815 (Y),(BL)
2SC1841 (E/F)
2SC2878 (A/B)



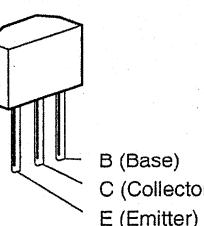
2SB647A (C)
2SD667A (C)



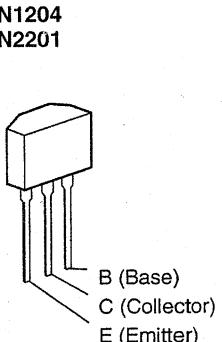
2SA1491 (O/P/Y) (Z)
2SC3855 (O/P/Y) (Z)



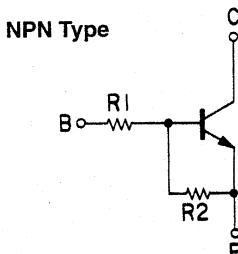
2SA1048 (GR)
2SC2458 (BL)



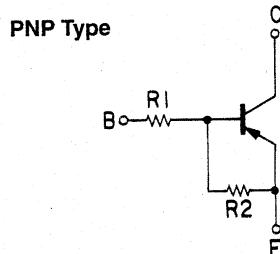
RN1201
RN1204
RN2201



RN1201
RN1204
RN2201



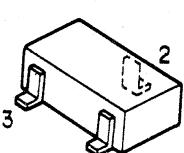
RN2201



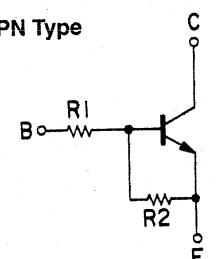
| | R1 | R2 |
|--------|----------|----------|
| RN1201 | 4.7 kohm | 4.7 kohm |
| RN1204 | 47 kohm | 47kohm |

| | R1 | R2 |
|--------|----------|----------|
| RN2201 | 4.7 kohm | 4.7 kohm |

DTC144EK



NPN Type



1 : GND/Emitter
2 : Out/Collector
3 : In/Base

| | R1 | R2 |
|----------|---------|---------|
| DTC144EK | 47 kohm | 47 kohm |

● POSISTOR

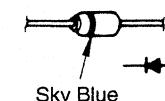
PTH9M04BB222TS2F333
(RE : PT501)



● DIODES (included LED)

1SS270A
1S2076A

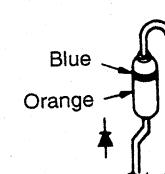
HZS3C-1 HZS9A-1
HZS7C-1 HZS12A-1
HZS7B-1 HZS12B-1



1SR35-200A



DSM1D2 (Type 3)



White

Blue

Orange

Black

Dark blue

Sky Blue

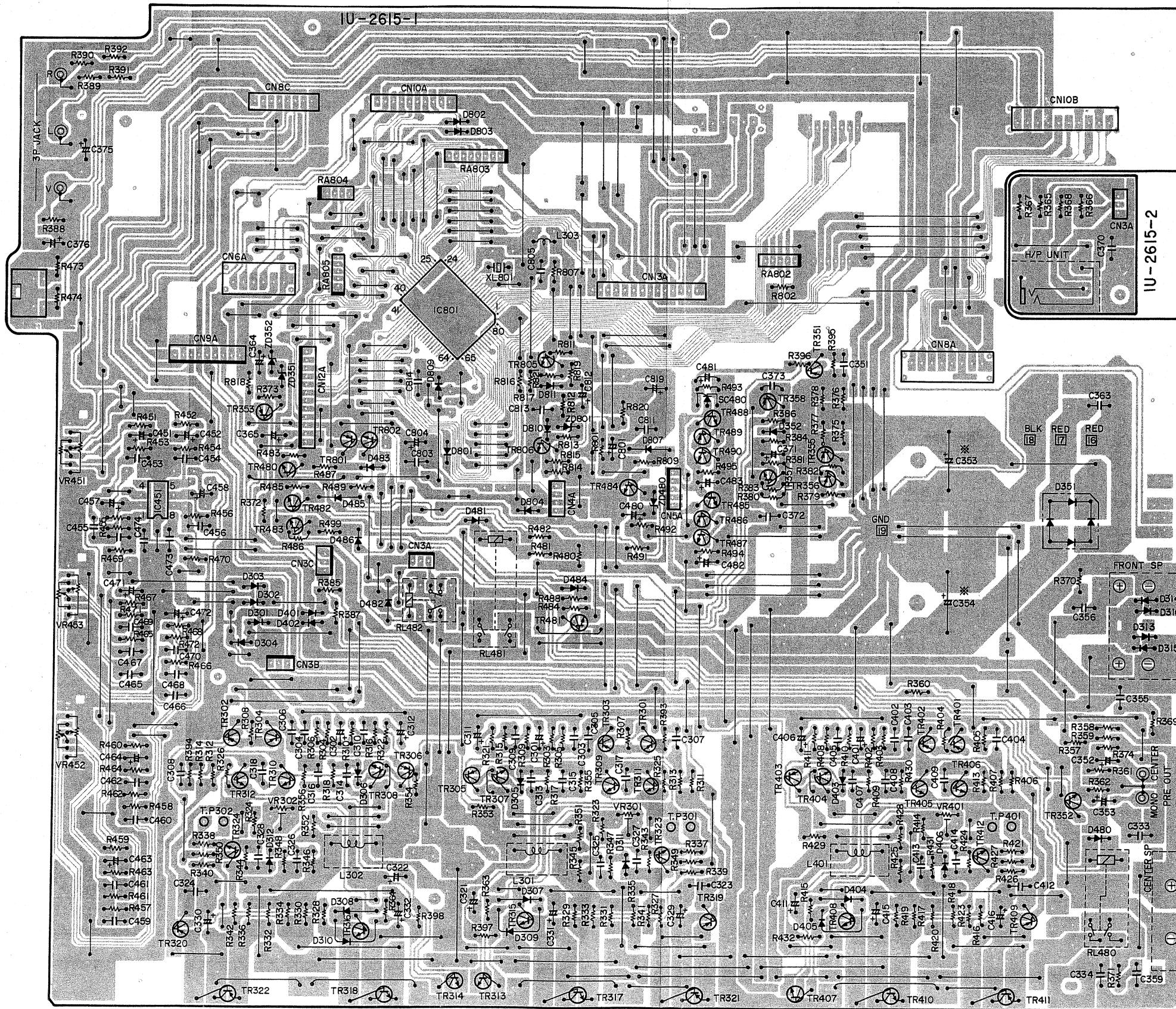
Dark blue</

PRINTED WIRING BOARD (Pattern side)

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____

1U-2615C, D MAIN AMP. UNIT ASS'Y

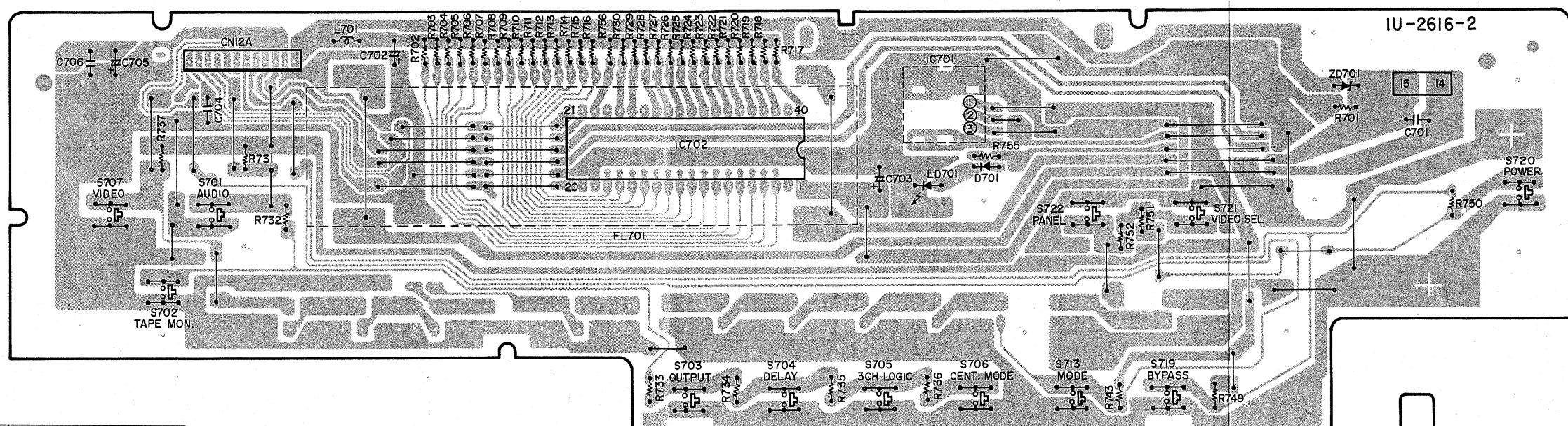
| | |
|-------------|-----------------|
| 1U-2615C, D | |
| 1 | Main Amp Unit |
| 2 | Head Phone Unit |



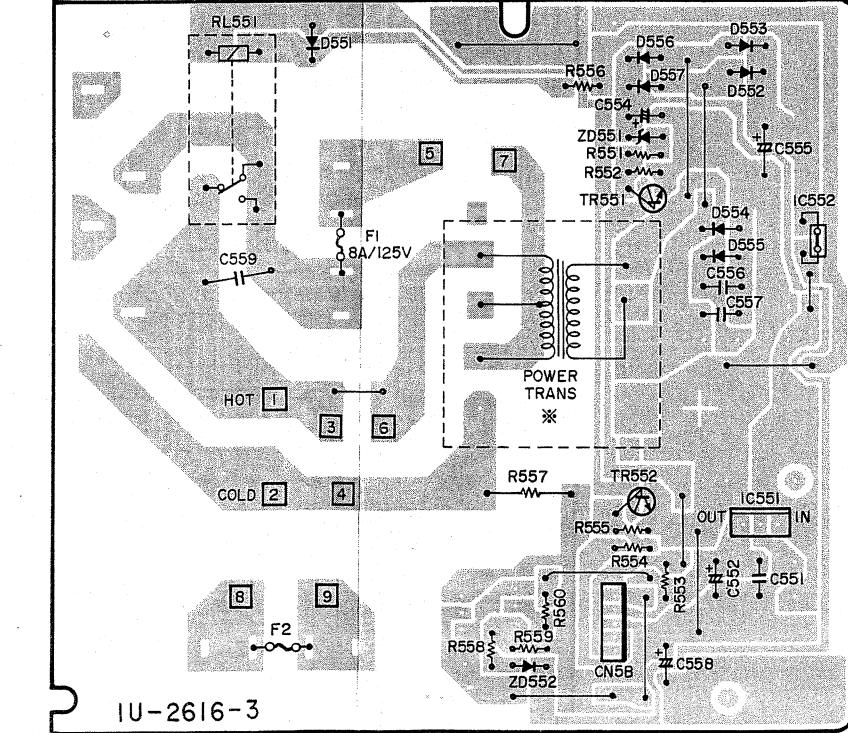
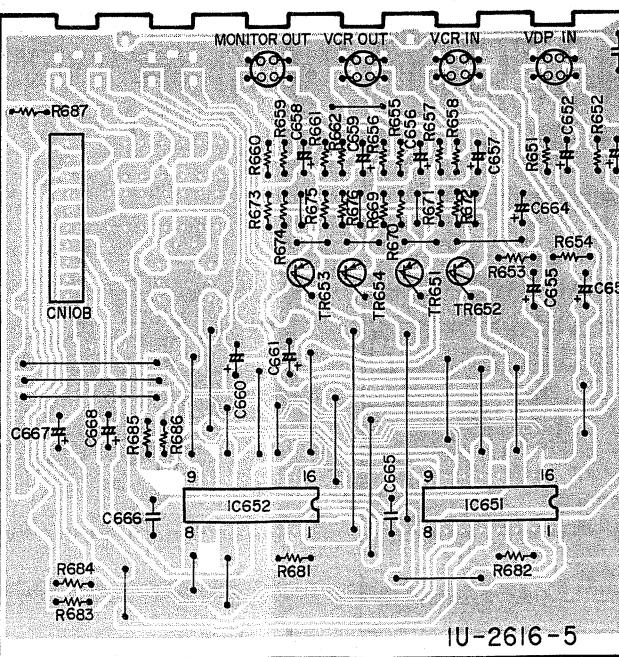
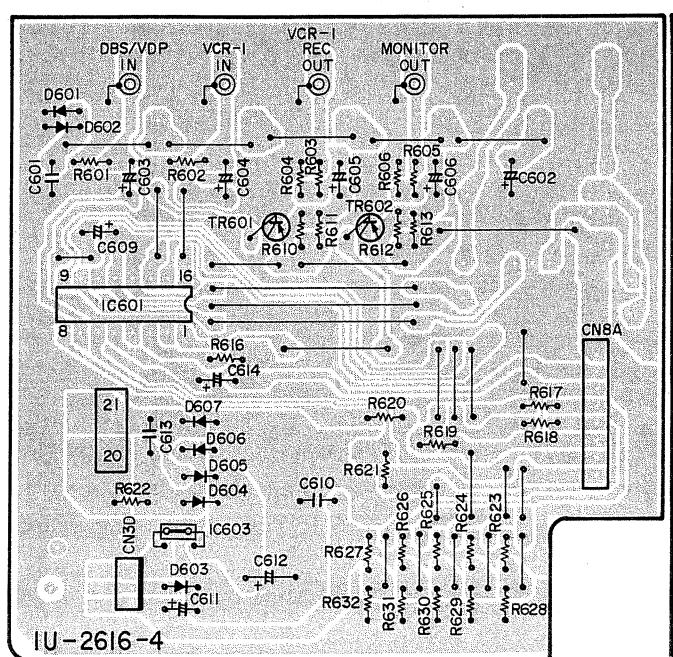
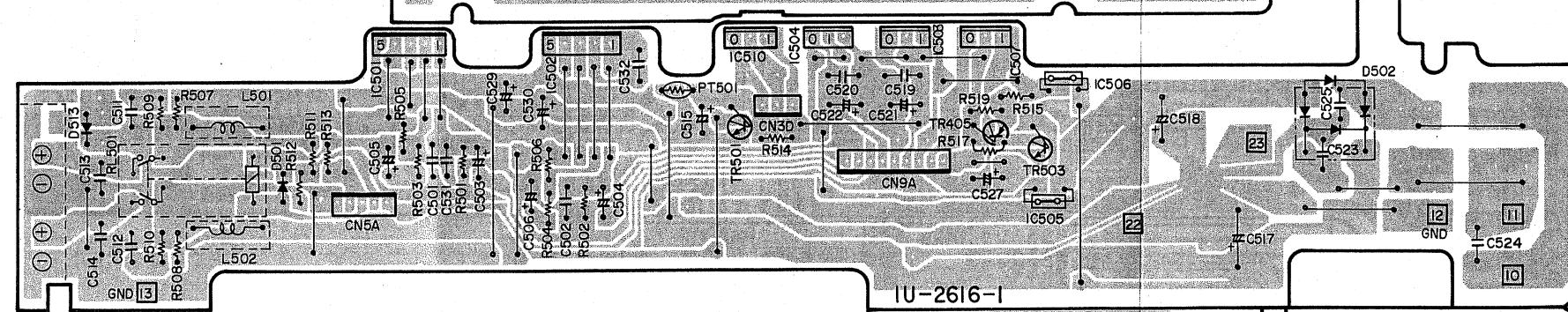
| | Unit No. | C353, 354 |
|---------------|----------|--------------------------|
| Multi-Voltage | 1U-2615C | 6800μF/50V 2544365717 |
| U.K. | 1U-2615D | 8200μF/56V 2544374708 |

1 2 3 4 5 6 7 8

| | |
|-------------|-------------------|
| 1U-2616C, D | |
| 1 | Rear Amp. Unit |
| 2 | MFD Unit |
| 3 | Power Supply Unit |
| 4 | Video Unit |
| 5 | S-Video Unit |
| 6 | Voltage Sel. Unit |

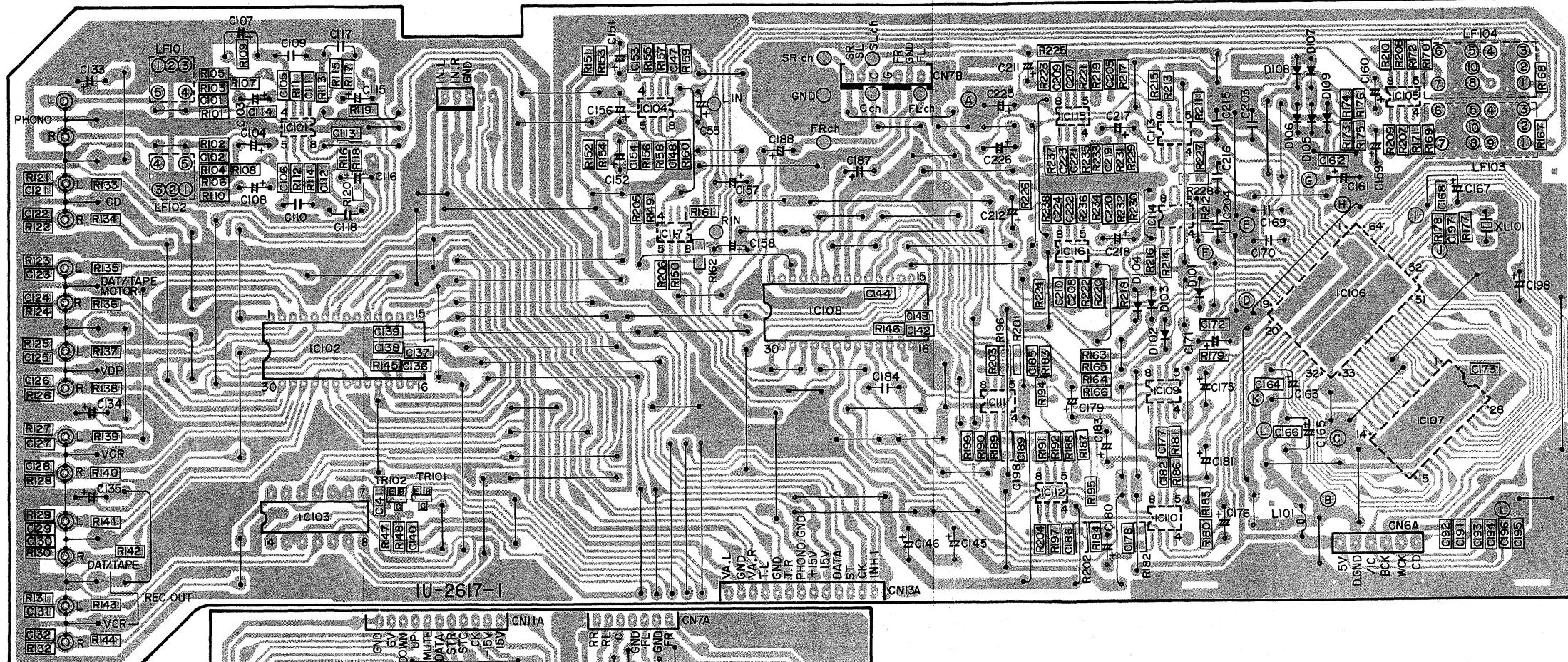


| | Unit No. | Power Trans | Fuse | |
|---------------|----------|--------------|--------------------------|---------------------------|
| | | | F001 | F002 |
| Multi-Voltage | 1U-2616C | 233 6068 002 | 206 1015 087 4A, 125V | 206 1015 061 2 A, 250V |
| U.K. | 1U-2616D | 233 6071 002 | 206 1015 032 2.5 A | — |

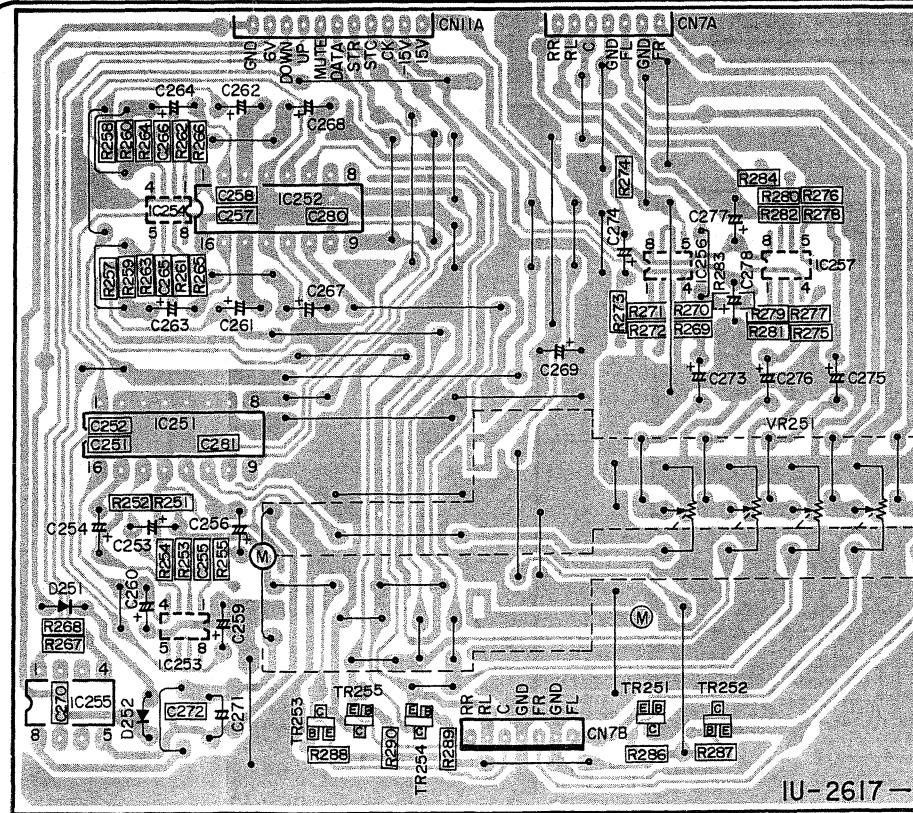
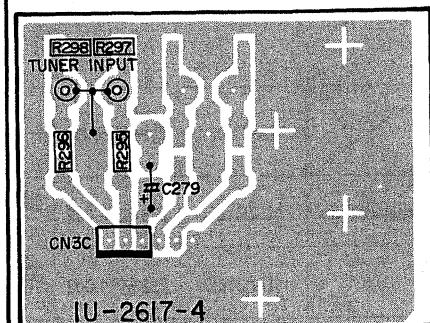


1 2 3 4 5 6 7 8

1U-2617C SURROUND UNIT ASS'Y



| | |
|---|------------------|
| | 1U-2617C |
| 1 | Surround Unit |
| 2 | Volume Unit |
| 3 | — |
| 4 | Tuner Input Unit |



NOTE FOR PARTS LIST

- Part indicated with the mark "◎" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol have critical characteristics.

Use ONLY replacement parts recommended by the manufacturer.

• Resistors

| Ex.: | RN | 14K | 2E | 182 | G | FR |
|-----------------------|-----------------------|----------|--------------------------|-----------------|--------|----|
| Type | Shape and performance | Power | Resistance | Allowable error | Others | |
| RD : Carbon | 2B : 1/8W | F : ±1% | P : Pulse-resistant type | | | |
| RC : Composition | 2E : 1/4W | G : ±2% | NL : Low noise type | | | |
| RS : Metal oxide film | 2H : 1/2W | J : ±5% | NB : Non-burning type | | | |
| RW : Winding | 3A : 1W | K : ±10% | FR : Fuse-resistor | | | |
| RN : Metal film | 3D : 2W | M : ±20% | F : Lead wire forming | | | |
| RK : Metal mixture | 3F : 3W | | | | | |
| | 3H : 5W | | | | | |

*** Resistance**

1 8 2 ⇒ 1800 ohm = 1.8 kohm
 Indicates number of zeros after effective number.
 2-digit effective number.

• Units: ohm

1 R 2 ⇒ 1.2 ohm
 1-digit effective number.
 2-digit effective number, decimal point indicated by R.

• Units: ohm

• Capacitors

| Ex.: | CE | 04W | 1H | 2R2 | M | BP |
|----------------------------------|-----------------------|-------------|----------------------------------|----------|-----------------|--------|
| Type | Shape and performance | Power | Dielectric strength | Capacity | Allowable error | Others |
| CE : Aluminum foil electrolytic | 0J : 6.3V | F : ±1% | HS : High stability type | | | |
| CA : Aluminum solid electrolytic | 1A : 10V | G : ±2% | BP : Non-polar type | | | |
| CS : Tantalum electrolytic | 1C : 16V | J : ±5% | HR : Ripple-resistant type | | | |
| CQ : Film | 1E : 25V | K : ±10% | DL : For charge and discharge | | | |
| CK : Ceramic | 1V : 35V | M : ±20% | HF : For assuring high frequency | | | |
| CC : Ceramic | 1H : 50V | Z : +80% | U : UL part | | | |
| CP : Oil | 2A : 100V | -20% | C : CSA part | | | |
| CM : Mica | 2B : 125V | P : +100% | W : UL-CSA type | | | |
| CF : Metallized | 2C : 160V | -0% | F : Lead wire forming | | | |
| CH : Metallized | 2D : 200V | C : ±0.25pF | | | | |
| | 2E : 250V | D : ±0.5pF | | | | |
| | 2H : 500V | = : Others | | | | |
| | 2J : 630V | | | | | |

*** Capacity (electrolyte only)**

2 2 2 ⇒ 2200μF
 Indicates number of zeros after effective number.
 2-digit effective number.

• Units: μF

2 R 2 ⇒ 2.2μF
 1-digit effective number.
 2-digit effective number, decimal point indicated by R.

• Units: μF

*** Capacity (except electrolyte)**

2 2 2 ⇒ 2200pF = 0.0022μF
 (More than 2) — Indicates number of zeros after effective number.
 2-digit effective number.

• Units: pF

2 2 1 ⇒ 220pF
 (0 or 1) — Indicates number of zeros after effective number.
 2-digit effective number.

• Units: pF

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

P.W.B. ASS'Y PARTS LIST

1U-2615C, D MAIN UNIT ASS'Y (C : Multi-Voltage, D : U.K.)

| Ref. No. | Part No. | Part Name | Remarks | Ref. No. | Part No. | Part Name | Remarks |
|-----------------------|--------------|-------------------------|-------------------|-----------|--------------|------------------------------|---|
| SEMICONDUCTORS | | | | | | | |
| IC451 | 263 0322 004 | IC BA4558 | | R311~314 | 241 2380 968 | Carbon Film 2.2kohm 1/4W(NB) | RD14B2E222JNBS |
| IC801 | 262 1839 108 | IC TMP87CK70AF-*** | μ-com | R317~318 | 241 2377 976 | Carbon Film 130ohm 1/4W(NB) | RD14B2E131JNBS |
| TR301~304 | 271 0094 919 | Transistor 2SA970(BL) | | R325,326 | 241 2315 967 | Fusible 68ohm 1/4W(NB) | RD14B2E680GFRS |
| TR305,306 | 271 0131 924 | Transistor 2SA988(E/F) | | R327,328 | 241 2378 920 | Carbon Film 220ohm 1/4W(NB) | RD14B2E221JNBS |
| TR307~312 | 273 0235 923 | Transistor 2SC1841(E/F) | | R329~336 | 244 2043 982 | Metal Oxide 0.22ohm 1W(NB) | RS14B3AR22JNBS(S) |
| TR313,314 | 273 0198 002 | Transistor 2SC1815(Y) | | R341~344 | 241 2380 950 | Carbon Film 2kohm 1/4W(NB) | RD14B2E202JNBS |
| TR315,316 | 274 0060 900 | Transistor 2SD667A(C) | | R345,346 | 244 2051 987 | Metal Oxide 4.7ohm 1W(NB) | RS14B3AR4R7JNBS(S) |
| TR319,320 | 272 0053 908 | Transistor 2SB647A(C) | | R355,356 | 241 2377 976 | Carbon Film 130ohm 1/4W(NB) | RD14B2E131JNBS |
| TR323,324 | 273 0235 923 | Transistor 2SC1841(E/F) | | R365~368 | 244 2051 958 | Metal Oxide 220ohm 1W(NB) | RS14B3A221JNBS(S) |
| TR351 | 271 0131 924 | Transistor 2SA988(E/F) | | R369~371 | 244 2051 987 | Metal Oxide 4.7ohm 1W(NB) | RS14B3A4R7JNBS(S) |
| TR352 | 273 0253 918 | Transistor 2SC2878(A/B) | | R372 | 241 2376 964 | Carbon Film 47ohm 1/4W(NB) | RD14B2E470JNBS |
| TR353 | 272 0053 908 | Transistor 2SB647A(C) | | R375~378 | 244 2043 982 | Metal Oxide 0.22ohm 1W(NB) | RS14B3AR22JNBS(S) |
| TR355,356 | 271 0131 924 | Transistor 2SA988(E/F) | | R406,407 | 241 2380 968 | Carbon Film 2.2kohm 1/4W(NB) | RD14B2E222JNBS |
| TR357 | 273 0235 923 | Transistor 2SC1841(E/F) | | R409 | 241 2377 976 | Carbon Film 130ohm 1/4W(NB) | RD14B2E131JNBS |
| TR358 | 271 0131 924 | Transistor 2SA988(E/F) | | R413 | 241 2315 967 | Fusible 68ohm 1/4W(NB) | RD14B2E680GFRS |
| TR401,402 | 271 0094 919 | Transistor 2SA970(BL) | | R416 | 241 2378 920 | Carbon Film 220ohm 1/4W(NB) | RD14B2E221JNBS |
| TR403 | 271 0131 924 | Transistor 2SA988(E/F) | | R417~420 | 244 2043 982 | Metal Oxide 0.22ohm 1W(NB) | RS14B3AR22JNBS(S) |
| TR404~406 | 273 0235 923 | Transistor 2SC1841(E/F) | | R423,424 | 241 2380 950 | Carbon Film 2kohm 1/4W(NB) | RD14B2E202JNBS |
| TR407 | 273 0198 002 | Transistor 2SC1815(Y) | | R425 | 244 2051 987 | Metal Oxide 4.7ohm 1W(NB) | RS14B3A4R7JNBS(S) |
| TR408 | 274 0060 900 | Transistor 2SD667A(C) | | R430 | 241 2377 976 | Carbon Film 130ohm 1/4W(NB) | RD14B2E131JNBS |
| TR409 | 272 0053 908 | Transistor 2SB647A(C) | | R480,481 | 241 2376 964 | Carbon Film 47ohm 1/4W(NB) | RD14B2E470JNBS |
| TR412 | 273 0235 923 | Transistor 2SC1841(E/F) | | R482 | 244 2051 974 | Metal Oxide 1kohm 1W(NB) | RS14B3A102JNBS(S) |
| TR480~485 | 273 0317 906 | Transistor 2SC2458(BL) | | R491 | 244 2050 988 | Metal Oxide 2kohm 1W(NB) | RS14B3A202JNBS(S) |
| TR486 | 271 0191 906 | Transistor 2SA1048(GR) | | R809 | 241 2387 940 | Carbon Film 4.7ohm 1/4W(NB) | RD14B2E4R7JNBS |
| TR487,488 | 273 0317 906 | Transistor 2SC2458(BL) | | | | | |
| TR489 | 271 0191 906 | Transistor 2SA1048(GR) | | | | | |
| TR490 | 273 0317 906 | Transistor 2SC2458(BL) | | | | | |
| TR801 | 269 0024 902 | Transistor RN2201 | Built in Resistor | VR301,302 | 211 6093 912 | Semi Fixed VR 4.7kohm | V06PB472 |
| TR802 | 269 0029 907 | Transistor RN1204 | Built in Resistor | VR401 | 211 6093 912 | Semi Fixed VR 4.7kohm | V06PB472 |
| TR805 | 273 0198 918 | Transistor 2SC1815(BL) | Built in Resistor | VR451 | 211 0798 103 | Variable Resister 100kohm | Balance |
| TR806 | 269 0023 903 | Transistor RN1201 | Built in Resistor | VR452 | 211 0797 117 | Variable Resister 30kohm | Bass |
| D301~306 | 276 0432 903 | Diode 1SS270A | | VR453 | 211 0797 104 | Variable Resister 5kohm | Treble |
| D307~310 | 276 0049 914 | Diode 1S2076A | | | | | |
| D311~316 | 276 0432 903 | Diode 1SS270A | | | | | |
| A) D351 | 276 0424 005 | Diode 4D4B42(LC1) | Bridge | | | | |
| D352 | 276 0432 903 | Diode 1SS270A | | | | | |
| D401~403 | 276 0432 903 | Diode 1SS270A | | | | | |
| D404,405 | 276 0049 914 | Diode 1S2076A | | | | | |
| D406 | 276 0432 903 | Diode 1SS270A | | | | | |
| D408,481 | 276 0432 903 | Diode 1SS270A | | | | | |
| D482 | 276 0049 914 | Diode 1S2076A | | | | | |
| D483,484 | 276 0432 903 | Diode 1SS270A | | | | | |
| D485 | 276 0049 914 | Diode 1S2076A | | | | | |
| D486 | 276 0432 903 | Diode 1SS270A | | | | | |
| D801~804 | 276 0432 903 | Diode 1SS270A | | | | | |
| D807 | 276 0049 914 | Diode 1S2076A | | | | | |
| D809~811 | 276 0432 903 | Diode 1SS270A | | | | | |
| ZD351,352 | 276 0473 904 | Zener Diode HZS12A-1 | 12V | C301,302 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| ZD480 | 276 0466 908 | Zener Diode HZS7C-1 | 7V | C303,304 | 253 1179 903 | Ceramic 100pF/50V | CK45B1H101K |
| ZD801 | 276 0454 907 | Zener Diode HZS3C-1 | 3V | C305,306 | 253 1179 945 | Ceramic 220pF/50V | CK45B1H221K |
| SC480 | 279 0016 904 | Thyristor SF0R1A42 | | C307,308 | 255 1264 966 | Plastic Film 0.0033μF/50V | CQ93M1H332J(B) |
| | | | | C309,310 | 253 4536 983 | Ceramic 22pF/50V | CC45SL1H220J |
| | | | | C311,312 | 254 4256 952 | Electrolytic 220μF/25V | CE04W1E221M |
| | | | | C313~316 | 255 1264 908 | Plastic Film 0.001μF/50V | CQ93M1H102J(B) |
| | | | | C317,318 | 253 4470 900 | Ceramic 10pF/500V | CC45SL2H100D |
| | | | | C321,322 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |
| | | | | C323,324 | 253 1128 909 | Ceramic 220pF/500V | CK45B2H221K |
| | | | | C325,326 | 256 1034 979 | Metalized 0.1μF/50V | CF93A1H104J |
| | | | | C327,328 | 255 1265 936 | Plastic Film 0.01μF/50V | CQ93M1H103J(B) |
| | | | | C329~332 | 254 4262 904 | Electrolytic 4.7μF/63V | CE04W1J4R7M |
| | | | | C333~335 | 253 1146 907 | Ceramic 0.01μF/50V | CK45F1H103Z |
| | | | | C351 | 255 1265 936 | Plastic Film 0.01μF/50V | CQ93M1H103J(B) |
| | | | | C352,353 | 254 4254 941 | Electrolytic 100μF/16V | CE04W1C101M |
| | | | | C353,354 | 254 4365 717 | Electrolytic 6800μF/56V | CE04W==682MC(DL) Multi-Voltage model |
| | | | | C353,354 | 254 4374 708 | Electrolytic 8200μF/56V | CE04W==822MC(DL) U.K. model |

| Ref. No. | Part No. | Part Name | Remarks | Ref. No. | Part No. | Part Name | Remarks | Q'ty |
|--------------------|--------------|---------------------------|---------------------|----------|--------------|------------------------|---------|------|
| C355,356 | 256 1034 979 | Metalized 0.1μF/50V | CF93A1H104J | | 204 8404 006 | 3P Pin Jack | V-AUX | 1 |
| C359 | 256 1034 979 | Metalized 0.1μF/50V | CF93A1H104J | | 205 0315 002 | 2P Connector Base | Pre-Out | 1 |
| C363 | 256 1042 903 | Metalized 0.1μF/250V | CF93A2E104K | | 205 0578 001 | S-Terminal | | 1 |
| C364,365 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M | | 415 0309 071 | PVC Tube(L=10) | | 6 |
| C370 | 253 1182 903 | Ceramic 0.047μF/12V | CK45F==473Z | CN3A | 205 0343 032 | 3P Conn. Base(KR-PH) | | 2 |
| C371 | 254 4258 918 | Electrolytic 10μF/35V | CE04W1V100M | CN4A | 205 0343 045 | 4P Conn. Base(KR-PH) | | 1 |
| C372,373 | 256 1034 979 | Metalized 0.1μF/50V | CF93A1H104J | CN5A | 205 0343 058 | 5P Conn. Base(KR-PH) | | 1 |
| C375,376 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M | CN6A | 205 0696 064 | JL Connector(BT-E) | | 1 |
| C401 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M | | 205 0696 006 | JL Connector(BT-E)-10P | | 1 |
| C402 | 253 1179 903 | Ceramic 100pF/50V | CK45B1H101K | CN8A | 205 0696 080 | JL Connector(BT-E) | | 1 |
| C403 | 253 1179 945 | Ceramic 220pF/50V | CK45B1H221K | CN8C | 205 0535 002 | 8P Conn. Base | | 1 |
| C404 | 255 1264 966 | Plastic Film 0.0033μF/50V | CQ93M1H332J(B) | CN9A | 205 0343 090 | 9P Conn. Base(KR-PH) | | 1 |
| C405 | 253 4536 983 | Ceramic 22pF/50V | CC45SL1H220J | CN10A | 205 0535 057 | 10P Conn. Base | | 1 |
| C406 | 254 4256 952 | Electrolytic 220μF/25V | CE04W1E221M | CN12A | 205 0375 026 | 12P Conn. Base(KR-PH) | | 1 |
| C407,408 | 255 1264 908 | Plastic Film 0.001μF/50V | CQ93M1H102J(B) | CN13A | 205 0707 005 | 13P Conn. Base | | 1 |
| C409 | 253 4470 900 | Ceramic 10pF/500V | CC45SL2H100D | | | | | |
| C411 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M | | | | | |
| C412 | 253 1128 909 | Ceramic 220pF/500V | CK45B2H221K | | | | | |
| C413 | 256 1034 979 | Metalized 0.1μF/50V | CF93A1H104J | | | | | |
| C414 | 255 1265 936 | Plastic Film 0.01μF/50V | CQ93M1H103J(B) | | | | | |
| C415,416 | 254 4262 904 | Electrolytic 4.7μF/63V | CE04W1J4R7M | | | | | |
| C451,452 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M | | | | | |
| C453-456 | 253 1179 903 | Ceramic 100pF/50V | CK45B1H101K | | | | | |
| C457,458 | 254 4254 938 | Electrolytic 47μF/16V | CE04W1C470M | | | | | |
| C459,460 | 255 1264 908 | Plastic Film 0.001μF/50V | CQ93M1H102J(B) | | | | | |
| C461,462 | 256 1034 995 | Metalized 0.15μF/50V | CF93A1H154J | | | | | |
| C463,464 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M | | | | | |
| C465,466 | 255 1264 937 | Plastic Film 0.0018μF/50V | CQ93M1H182J(B) | | | | | |
| C467,468 | 255 1265 949 | Plastic Film 0.012μF/50V | CQ93M1H123J(B) | | | | | |
| C469,470 | 256 1034 953 | Metalized 0.068μF/50V | CF93A1H683J | | | | | |
| C471,472 | 254 4260 935 | Electrolytic 0.47μF/50V | CE04W1HR47M | | | | | |
| C473 | 256 1034 937 | Metalized 0.047μF/50V | CF93A1H473J | | | | | |
| C474 | 253 1181 917 | Ceramic 0.022μF/50V | CK45F1H223Z | | | | | |
| C480 | 254 4260 980 | Electrolytic 10μF/50V | CE04W1H100M | | | | | |
| C481 | 254 4260 993 | Electrolytic 22μF/50V | CE04W1H220M | | | | | |
| C482,483 | 254 4250 945 | Electrolytic 330μF/6.3V | CE04W0J331M | | | | | |
| C803 | 253 1181 904 | Ceramic 0.01μF/50V | CK45F1H103Z | | | | | |
| C804 | 254 4250 932 | Electrolytic 220μF/6.3V | CE04W0J221M | | | | | |
| C805 | 256 1034 982 | Metalized 0.12μF/50V | CF93A1H124J | | | | | |
| C811 | 253 1181 904 | Ceramic 0.01μF/50V | CK45F1H103Z | | | | | |
| C812 | 254 4258 905 | Electrolytic 4.7μF/35V | CE04W1V4R7M | | | | | |
| C813 | 255 1265 936 | Plastic Film 0.01μF/50V | CQ93M1H103J(B) | | | | | |
| C814 | 253 1181 904 | Ceramic 0.01μF/50V | CK45F1H103Z | | | | | |
| C819 | 254 4250 783 | Electrolytic 3300μF/6.3V | CE04W0J332MC | | | | | |
| OTHER GROUP | | | | Q'ty | | | | |
| L301,302 | — | (P.W.Board) | | 1 | | | | |
| L303 | 235 0068 004 | Inductor 1μH | | 2 | | | | |
| L303 | 235 0060 989 | Inductor 120μH | | 1 | | | | |
| L401 | 235 0068 004 | Inductor 1 μH | | 1 | | | | |
| RL480 | 214 0167 005 | Relay(G5Z-2A) | | 1 | | | | |
| RL481 | 214 9003 005 | Relay | | 1 | | | | |
| RL482 | 214 0162 000 | Relay(A12W-K) | | 1 | | | | |
| XL801 | 399 0191 903 | Ceramic Resonator | CST 4.00MGW19MGW | 1 | | | | |
| | 204 8354 004 | Headphone Jack | | | | | | |
| | 205 0550 003 | 4P Terminal | Front | 1 | | | | |
| | 205 0695 007 | 2P Push Terminal(V-1) | Center | 1 | | | | |

1U-2616C, D REAR AMP. UNIT ASS'Y
(C : Multi-Voltage, D : U.K.)

| Ref. No. | Part No. | Part Name | Remarks | Ref. No. | Part No. | Part Name | Remarks |
|--|--------------|-----------------------------------|---------------------------|--------------------|--------------|--------------------------|---------------------|
| SEMICONDUCTORS | | | | | | | |
| IC501,502 | 263 0855 005 | IC SI-18752 | | C517,518 | 254 4259 014 | Electrolytic 3300μF/35V | CE04W1V332M |
| IC503 | 263 0812 006 | IC NJM7815FA(S) | Regulator +15V | C519,520 | 253 1181 904 | Ceramic 0.01μF/50V | CK45F1H103Z |
| IC504 | 263 0561 001 | IC NJM7915FA | Regulator -15V | C521,522 | 254 4258 918 | Electrolytic 10μF/35V | CE04W1V100M |
| IC505,506 | 268 0074 904 | IC ICP-N20 | IC Protector 20V | C524 | 256 1042 903 | Metalized 0.1μF/250V | CF93A2E104K |
| IC507 | 263 0809 006 | IC NJM7805FA(S) | Regulator +5V | C526 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| IC510 | 263 0809 006 | IC NJM7805FA(S) | Regulator +5V | C529,530 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |
| IC551 | 263 0793 002 | IC NJM7806FA(S) | Regulator +6V | C533 | 253 1146 907 | Ceramic 0.01μF/50V | CK45F1H103Z |
| IC552 | 268 0073 905 | IC ICP-N15 | IC Protector 15V | C534 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |
| IC601 | 263 0856 004 | IC BA7625 | | C551 | 253 1181 904 | Ceramic 0.01μF/50V | CK45F1H103Z |
| IC603 | 268 0073 905 | IC ICP-N15 | IC Protector 15V | C552 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| IC651 | 263 0856 004 | IC BA7625 | | C554 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |
| IC652 | 263 0857 003 | IC BA7626 | | C555 | 254 4256 790 | Electrolytic 2200μF/25V | CE04W1E222MC |
| IC701 | 499 0150 008 | IC SBX1610-52 | | C556,557 | 253 1181 904 | Ceramic 0.01μF/50V | CK45F1H103Z |
| IC702 | 262 1564 004 | IC MSC1937-01 | Remocon Receiver μ-com | C558 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |
| TR501 | 273 0198 918 | Transistor 2SC1815(BL) | | A C559 | 253 8014 702 | Ceramic 0.01μF/400V(AC) | CK45F2GAC103MC |
| TR503 | 269 0023 903 | Transistor RN1201 | | | | | |
| TR504 | 272 0053 908 | Transistor 2SB647A(C) | | | | | |
| TR551,552 | 273 0317 906 | Transistor 2SC2458(BL) | | | | | |
| TR601,602 | 271 0102 924 | Transistor 2SA1015(GR) | | | | | |
| TR651-654 | 271 0102 924 | Transistor 2SA1015(GR) | | | | | |
| D501 | 276 0432 903 | Diode 1SS270A | | | | | |
| A D502 | 276 0305 001 | Diode S4V/B20 | Bridge | | | | |
| D551 | 276 0432 903 | Diode 1SS270A | | | | | |
| D552-557 | 276 0553 905 | Diode 1SR35-200A | | | | | |
| D601-603 | 276 0432 903 | Diode 1SS270A | | | | | |
| D604-607 | 276 0548 910 | Diode DSM1D2(Type-3) | | | | | |
| D701 | 276 0432 903 | Diode 1SS270A | | | | | |
| ZD551 | 276 0465 909 | Zener Diode HZS7B-1 | 7V | | | | |
| ZD701 | 276 0467 907 | Zener Diode HZS9A-1 | 9V | | | | |
| PT501 | 279 0034 067 | Thermistor PTH9M04BB222TS2F333 | | | | | |
| LD701 | 393 9434 906 | LED SEL1210S | | | | | |
| FL701 | 393 4131 000 | FLD (FIP14PM8) Ass'y | Red | | | | |
| RESISTORS GROUP | | | | | | | |
| (Not included Carbon Film ±5% 1/4 W Type. Refer to the Schematic Diagram for those parts.) | | | | | | | |
| A R509,510 | 244 2051 987 | Metal Oxide 4.7ohm 1W(NB) | RS14B3A4R7JNBS(S) | OTHER GROUP | | | |
| A R513 | 241 2376 964 | Carbon Film 47ohm 1/4W(NB) | RD14B2E470JNBS | | — | (P.W.Board) | Q'ty |
| A R515 | 241 2387 940 | Carbon Film 4.7ohm 1/4W(NB) | RD14B2E4R7JNBS | L501,502 | 235 0068 004 | Inductor 1μH | 1 |
| A R556 | 241 2375 978 | Carbon Film 20ohm 1/4W(NB) | RD14B2E200JNBS | L701 | 235 0060 989 | Inductor 120μH | 2 |
| A R622 | 241 2387 908 | Carbon Film 1ohm 1/4W(NB) | RD14B2E010JNBS | RL501 | 214 0167 005 | Relay(G5Z-2A) | 1 |
| CAPACITORS GROUP | | | | A RL551 | 214 0120 013 | Relay(TV-8) | 1 |
| C501,502 | 253 1179 903 | Ceramic 100pF/50V | CK45B1H101K | S701-707 | 212 4388 907 | Tact Switch | 7 |
| C503,504 | 254 4260 951 | Electrolytic 2.2μF/50V | CE04W1H2R2M | S718-722 | 212 4388 907 | Tact Switch | 5 |
| C505,506 | 254 4254 938 | Electrolytic 47μF/16V | CE04W1C470M | A A | 212 2611 003 | Slide Switch(Vol.Sel SW) | 2 |
| C511,512 | 256 1034 979 | Metalized 0.1μF/50V | CF93A1H104J | A A | 233 6068 002 | Power Trans(Mini) | Multi-Voltage model |
| C513,514 | 253 1181 904 | Ceramic 0.01μF/50V | CK45F1H103Z | A A | 233 6067 003 | Power Trans(Mini) | Multi-Voltage model |
| C515 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M | A F001 | 202 0022 008 | Fuse Holder | U.K. model |
| | | | | A F002 | 202 0022 008 | Fuse Holder | Multi-Voltage model |
| | | | | A F001 | 206 1015 087 | Fuse 4.0A(T) 125V | U.K. model |
| | | | | A F002 | 206 1015 061 | Fuse 2A(T) 250V | Multi-Voltage model |
| | | | | A F001 | 206 1015 032 | Fuse 2.5A(T) | U.K. model |
| | | | | | | | 1 |

U-2617C SURROUND UNIT ASS'Y

| Ref. No. | Part No. | Part Name | Remarks |
|----------|--------------|---------------------------|------------|
| R194,195 | 247 0009 930 | Chip Carbon 6.2kohm 1/10W | RM73B-622J |
| R196,197 | 247 0009 943 | Chip Carbon 6.8kohm 1/10W | RM73B-682J |
| R198 | 247 0009 943 | Chip Carbon 6.8kohm 1/10W | RM73B-682J |
| R199 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R201,202 | 247 0009 943 | Chip Carbon 6.8kohm 1/10W | RM73B-682J |
| R203,204 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R205,206 | 247 0007 945 | Chip Carbon 1kohm 1/10W | RM73B-102J |
| R207-210 | 247 0009 985 | Chip Carbon 10kohm 1/10W | RM73B-103J |
| R211,212 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R213,214 | 247 0007 945 | Chip Carbon 1kohm 1/10W | RM73B-102J |
| R215,216 | 247 0008 960 | Chip Carbon 3.3kohm 1/10W | RM73B-332J |
| R217-222 | 247 0009 985 | Chip Carbon 10kohm 1/10W | RM73B-103J |
| R223,224 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R225,226 | 247 0011 944 | Chip Carbon 47kohm 1/10W | RM73B-473J |
| R227,228 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R229,230 | 247 0011 944 | Chip Carbon 47kohm 1/10W | RM73B-473J |
| R231-236 | 247 0009 985 | Chip Carbon 10kohm 1/10W | RM73B-103J |
| R237,238 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R251 | 247 0012 927 | Chip Carbon 100kohm 1/10W | RM73B-104J |
| R252 | 247 0013 900 | Chip Carbon 220kohm 1/10W | RM73B-224J |
| R253 | 247 0008 960 | Chip Carbon 3.3kohm 1/10W | RM73B-332J |
| R254 | 247 0007 945 | Chip Carbon 1kohm 1/10W | RM73B-102J |
| R255 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R267,268 | 247 0009 985 | Chip Carbon 10kohm 1/10W | RM73B-103J |
| R269 | 247 0013 984 | Chip Carbon 470kohm 1/10W | RM73B-474J |
| R270 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R271 | 247 0009 927 | Chip Carbon 5.6kohm 1/10W | RM73B-562J |
| R272 | 247 0007 945 | Chip Carbon 1kohm 1/10W | RM73B-102J |
| R273 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R275,276 | 247 0013 984 | Chip Carbon 470kohm 1/10W | RM73B-474J |
| R277,278 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R279,280 | 247 0009 969 | Chip Carbon 8.2kohm 1/10W | RM73B-822J |
| R281,282 | 247 0007 945 | Chip Carbon 1kohm 1/10W | RM73B-102J |
| R283,284 | 247 0005 905 | Chip Carbon 100ohm 1/10W | RM73B-101J |
| R295,296 | 247 0006 962 | Chip Carbon 470ohm 1/10W | RM73B-471J |
| R297,298 | 247 0015 966 | Chip Carbon 2.7Mohm 1/10W | RM73B-275J |
| VR251 | 211 0637 002 | Variable Resister100kohm | |

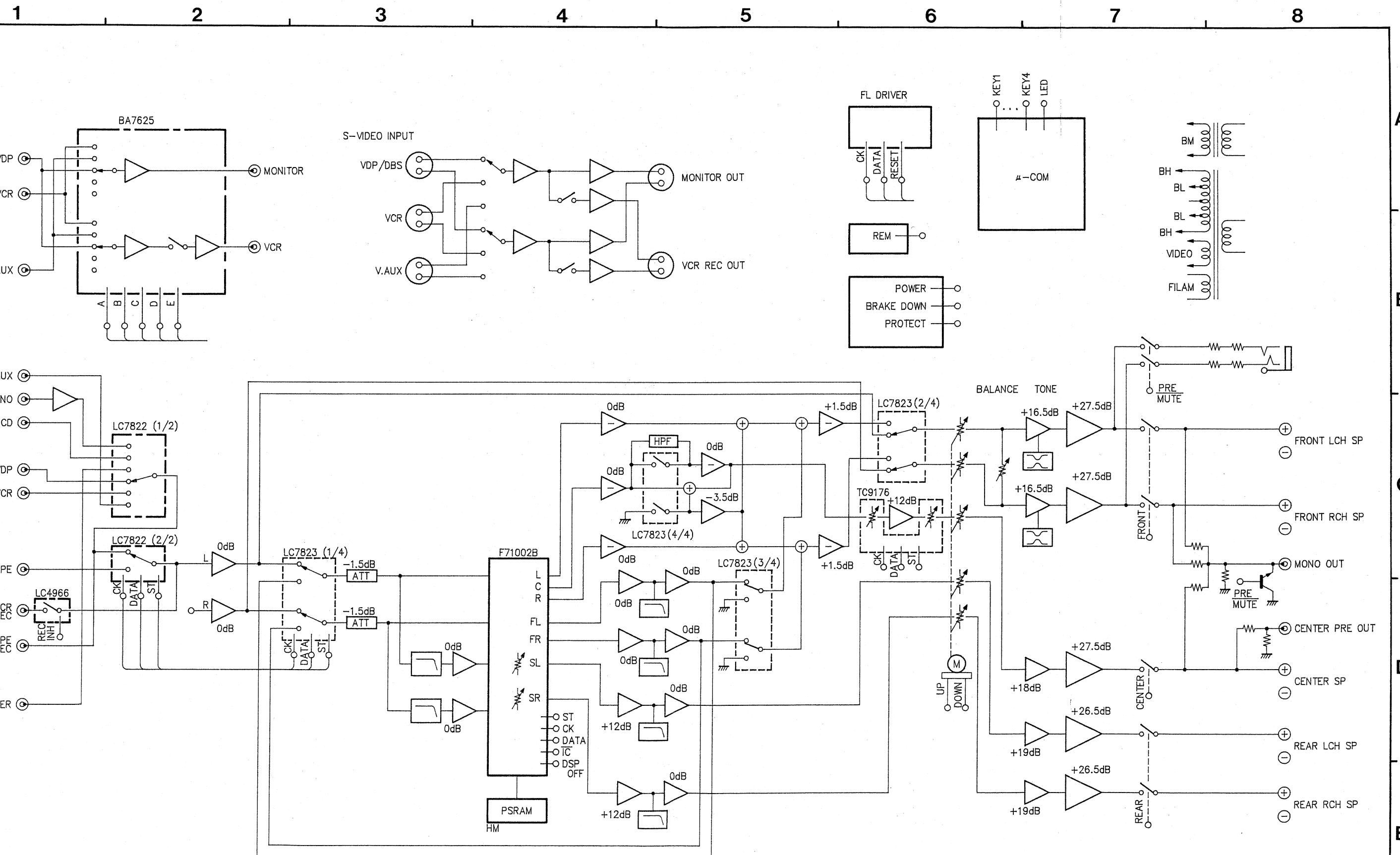
| CAPACITORS GROUP | | | | |
|------------------|--------------|---------------------------|----------------|--|
| C101,102 | 257 0005 944 | Chip Ceramic 220pF/50V | CC73SL1H221J | |
| C103,104 | 254 4254 909 | Electrolytic 10µF/16V | CE04W1C100M | |
| C105,106 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J | |
| C107,108 | 254 4254 925 | Electrolytic 33µF/16V | CE04W1C330M | |
| C109,110 | 255 1264 995 | Plastic Film 0.0056µF/50V | CQ93M1H562J(B) | |
| C111,112 | 257 0009 908 | Chip Ceramic 1500pF/50V | CK73B1H152K | |
| C113,114 | 257 0012 982 | Chip Ceramic 0.022µF/50V | CK73F1H223Z | |
| C115,116 | 254 4260 951 | Electrolytic 2.2µF/50V | CE04W1H2R2M | |
| C133-135 | 254 4260 948 | Electrolytic 1µF/50V | CE04W1H010M | |
| C136-138 | 257 0012 982 | Chip Ceramic 0.022µF/50V | CK73F1H223Z | |
| C139 | 257 0009 924 | Chip Ceramic 2200pF/50V | CK73B1H222K | |
| C140,141 | 257 0012 966 | Chip Ceramic 0.01µF/50V | CK73F1H103Z | |
| C142-144 | 257 0012 982 | Chip Ceramic 0.022µF/50V | CK73F1H223Z | |
| C145,146 | 254 4261 918 | Electrolytic 47µF/50V | CE04W1H470M | |
| C151,152 | 254 4254 909 | Electrolytic 10µF/16V | CE04W1C100M | |
| C153,154 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J | |
| C157,158 | 254 4260 951 | Electrolytic 2.2µF/50V | CE04W1H2R2M | |
| C159,160 | 254 4260 948 | Electrolytic 1µF/50V | CE04W1H010M | |
| C161 | 254 4254 941 | Electrolytic 100µF/16V | CE04W1C101M | |
| C162 | 257 0012 966 | Chip Ceramic 0.01µF/50V | CK73F1H103Z | |
| C163 | 254 4252 930 | Electrolytic 100µF/10V | CE04W1A101M | |
| C164 | 257 0012 966 | Chip Ceramic 0.01µF/50V | CK73F1H103Z | |

| Ref. No. | Part No. | Part Name | Remarks |
|----------|--------------|----------------------------------|----------------|
| C164 | 257 0006 927 | Chip Ceramic 470pF/50V | CC73SL1H471J |
| C165 | 254 4254 938 | Electrolytic 47μF/16V | CE04W1C470M |
| C166 | 257 0006 927 | Chip Ceramic 470pF/50V | CC73SL1H471J |
| C167 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| C168 | 257 0012 966 | Chip Ceramic 0.01μF/50V | CK73F1H103Z |
| C169,170 | 255 1264 966 | Plastic Film 0.0033μF/50V | CQ93M1H332J(B) |
| C171 | 254 4250 932 | Electrolytic 220μF/6.3V | CE04WV221M |
| C172 | 257 0014 935 | Chip Ceramic 0.1μF/25V | CK73F1E104Z |
| C173 | 257 0008 983 | Chip Ceramic 1000pF/50V | CK73B1H102K |
| C175,176 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| C177,178 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J |
| C179,180 | 254 4258 905 | Electrolytic 4.7μF/35V | CE04W1V4R7M |
| C181 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| C182 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J |
| C183 | 254 4258 905 | Electrolytic 4.7μF/35V | CE04W1V4R7M |
| C184 | 256 1035 936 | Metalized 0.33μF/50V | CF93A1H334J |
| C185,186 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J |
| C187,188 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| C189 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J |
| C191-194 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J |
| C196 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J |
| C198 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |
| C203,204 | 253 1126 901 | Ceramic 150pF/500V | CK45B2H151K |
| C205,206 | 257 0009 908 | Chip Ceramic 1500pF/50V | CK73B1H152K |
| C207,208 | 257 0005 944 | Chip Ceramic 220pF/50V | CC73SL1H221J |
| C209,210 | 257 0009 953 | Chip Ceramic 3900pF/50V | CK73B1H392K |
| C211,212 | 254 4260 906 | Electrolytic 0.1μF/50V | CE04W1H0R1M |
| C215,216 | 253 4488 905 | Ceramic 56pF/500V | CC45SL2H560J |
| C217,218 | 254 4260 906 | Electrolytic 0.1μF/50V | CE04W1H0R1M |
| C219,220 | 257 0009 908 | Chip Ceramic 1500pF/50V | CK73B1H152K |
| C221,222 | 257 0005 944 | Chip Ceramic 220pF/50V | CC73SL1H221J |
| C223,224 | 257 0009 953 | Chip Ceramic 3900pF/50V | CK73B1H392K |
| C229,230 | 253 1100 901 | Ceramic 100pF/50V | CK45B1H101K |
| C231,232 | 253 1112 902 | Ceramic 1000pF/50V | CK45B1H102K |
| C233,234 | 253 9039 003 | BC Ceramic 0.1μF/25V | CK45=1E104Z |
| C251,252 | 257 0012 982 | Chip Ceramic 0.022μF/50V | CK73F1H223Z |
| C253,254 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| C255 | 257 0004 961 | Chip Ceramic 100pF/50V | CC73SL1H101J |
| C256 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| C269 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |
| C270 | 257 0012 966 | Chip Ceramic 0.01μF/50V | CK73F1H103Z |
| C271 | 254 3056 917 | Electrolytic 1μF/50V (Bipole) | CE04D1H010MBP |
| C272 | 257 0012 966 | Chip Ceramic 0.01μF/50V | CK73F1H103Z |
| C273 | 254 4254 909 | Electrolytic 10μF/16V | CE04W1C100M |
| C275,276 | 254 4254 908 | Electrolytic 10μF/16V | CE04W1C100M |
| C277,278 | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |

| OTHER GROUP | | Q'ty |
|-------------|--------------|----------------------|
| | — | (P.W.Board) |
| L101 | 235 0060 989 | Inductor 120 μ H |
| LF103,104 | 232 0168 002 | LC Filter |
| XL101 | 399 0209 905 | Ceramic Resonator |
| | 204 8313 003 | 4P Pin Jack(S-GND) |
| | 204 8346 009 | 6P Pin Jack(S-GND) |
| | 205 0274 004 | 2P Connector Base |
| | 205 0343 032 | 3P Conn. Base(KR-PH) |
| CN6A | 205 0748 064 | JL Connector(R) |

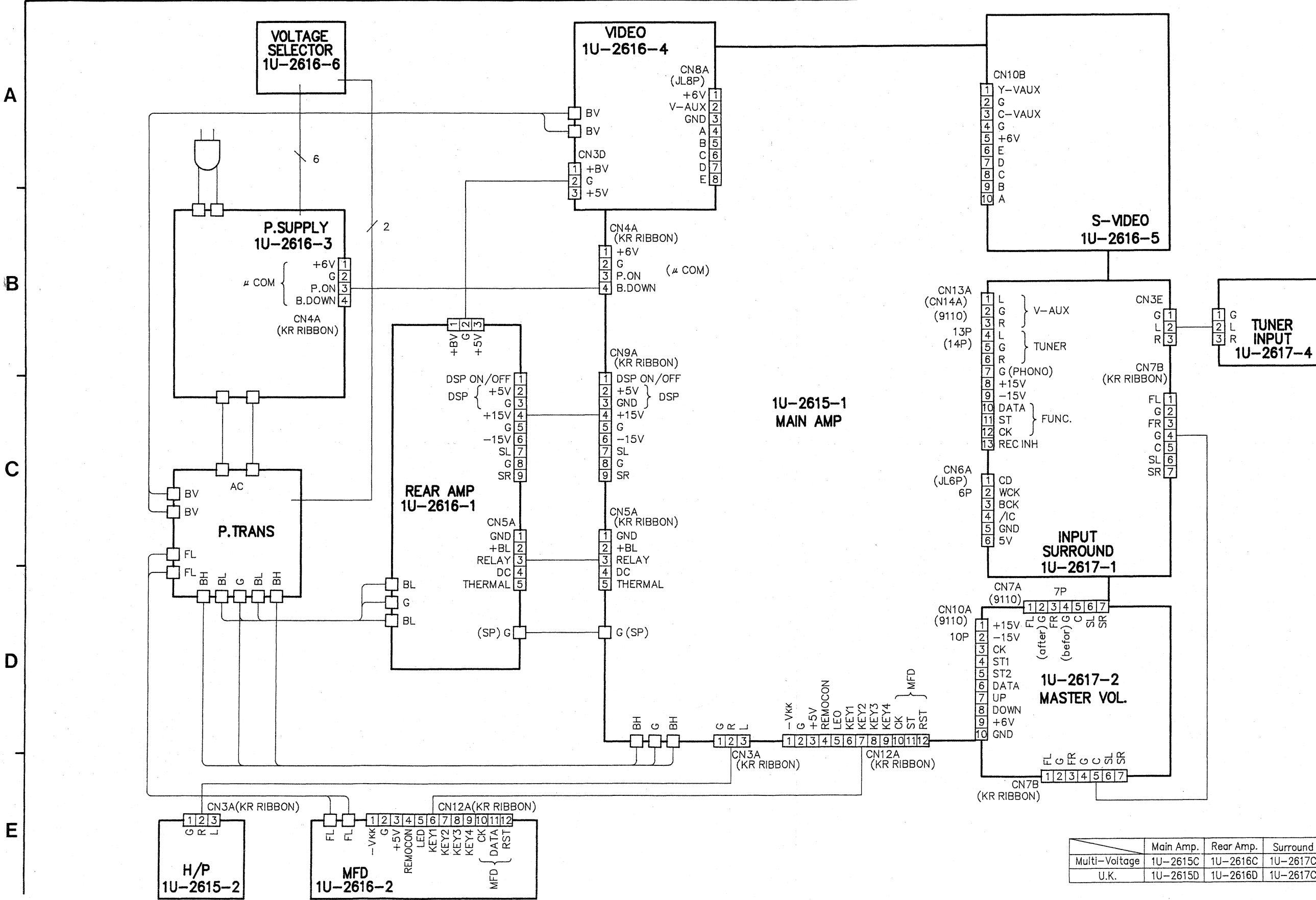
| Ref. No. | Part No. | Part Name | Remarks | Q'ty |
|----------|--------------|----------------------|---------|------|
| CN8C | 205 0536 001 | 8P Conn. Socket | | 1 |
| CN7B | 205 0343 074 | 7P Conn. Base(KR-PH) | | 2 |
| CN10A | 205 0536 056 | 10P Conn. Socket | | 1 |
| CN13A | 205 0708 004 | 13P Conn. Socket | | 1 |
| | 203 0426 005 | 1P Conn. Cord Ass'y | | 1 |
| | 414 0695 009 | Shield Plate | | 1 |

BLOCK DIAGRAM



WIRING DIAGRAM

1 2 3 4 5 6 7 8



SCHEMATIC DIAGRAM-1/3

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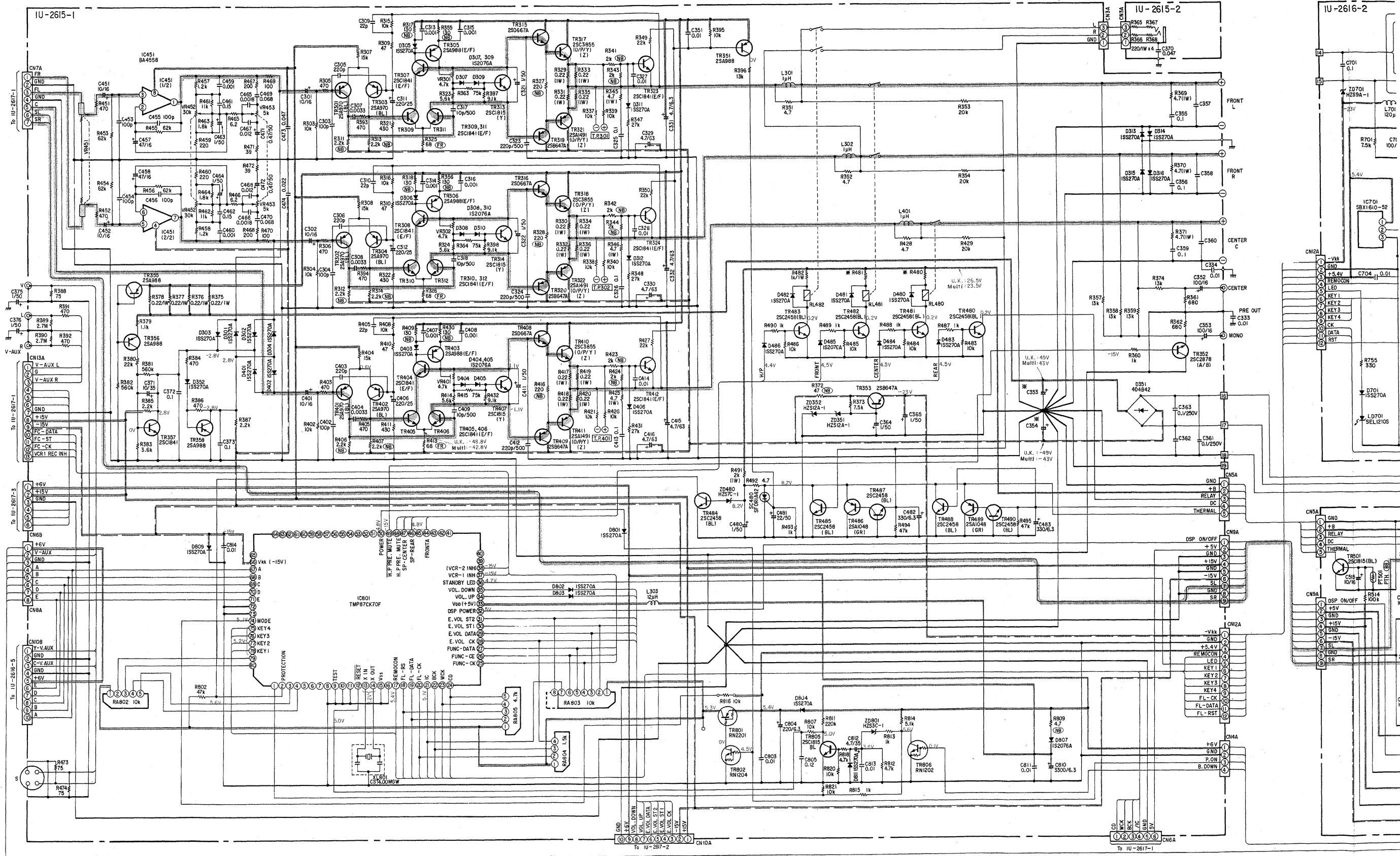
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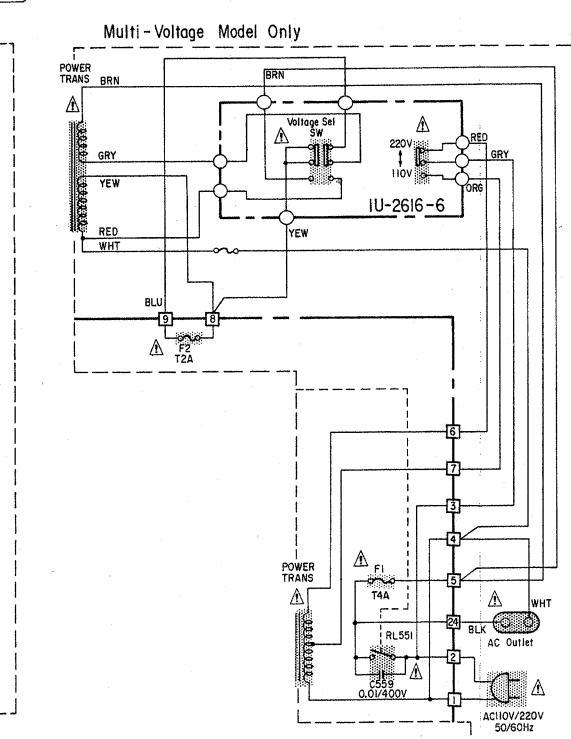
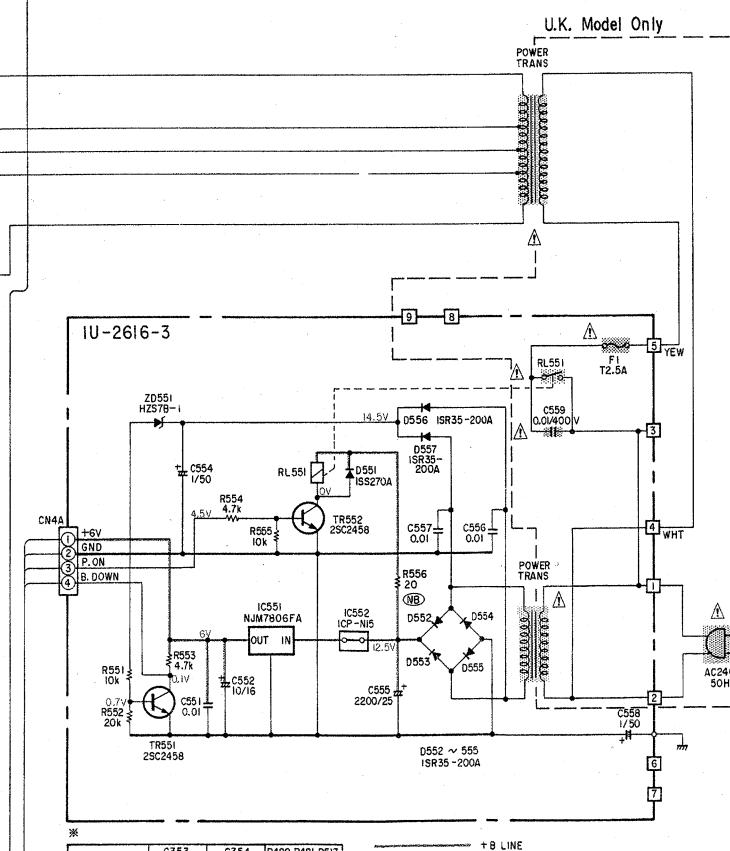
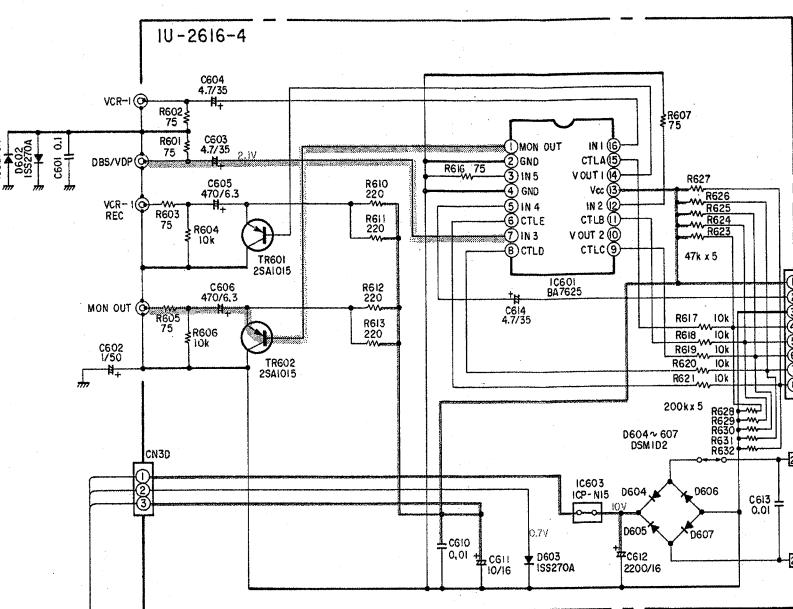
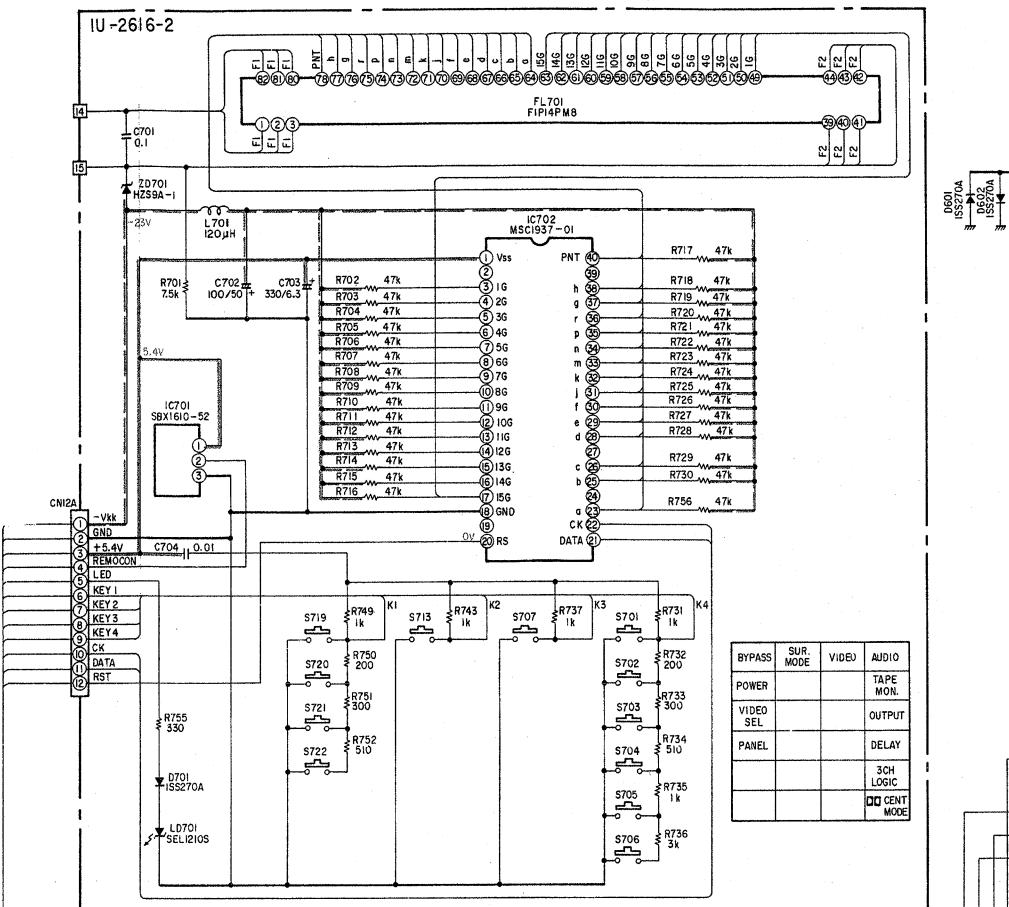
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8 9 10 11 12 13 14 15



NOTES
 ALL RESISTANCE VALUES IN OHM. k=1,000 OHM.
 M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD.
 P=MICRO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

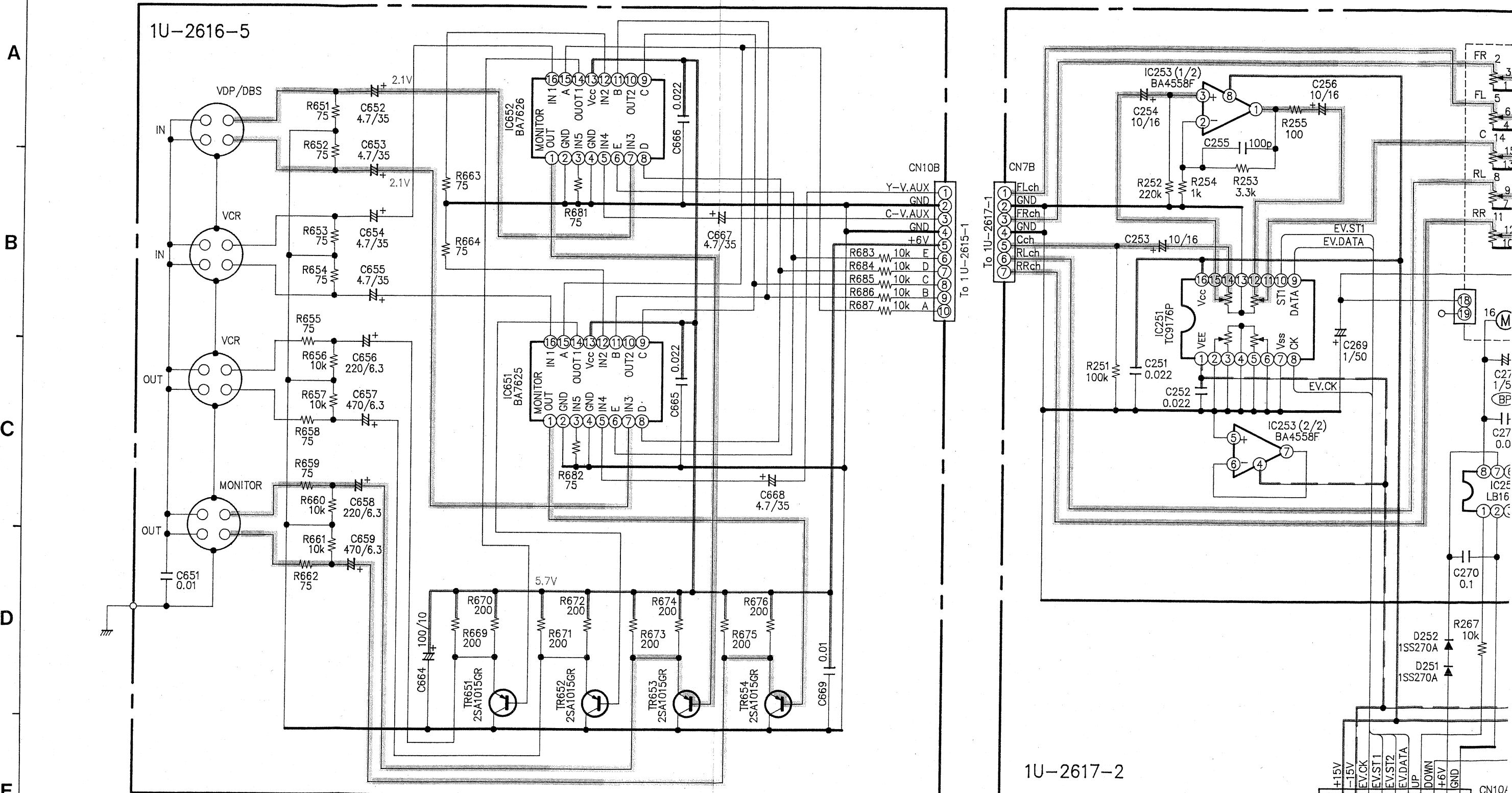
WARNING:
 Parts marked with this symbol have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 millamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

A**B****C****D****E**

1 2 3 4 5 6 7 8



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9

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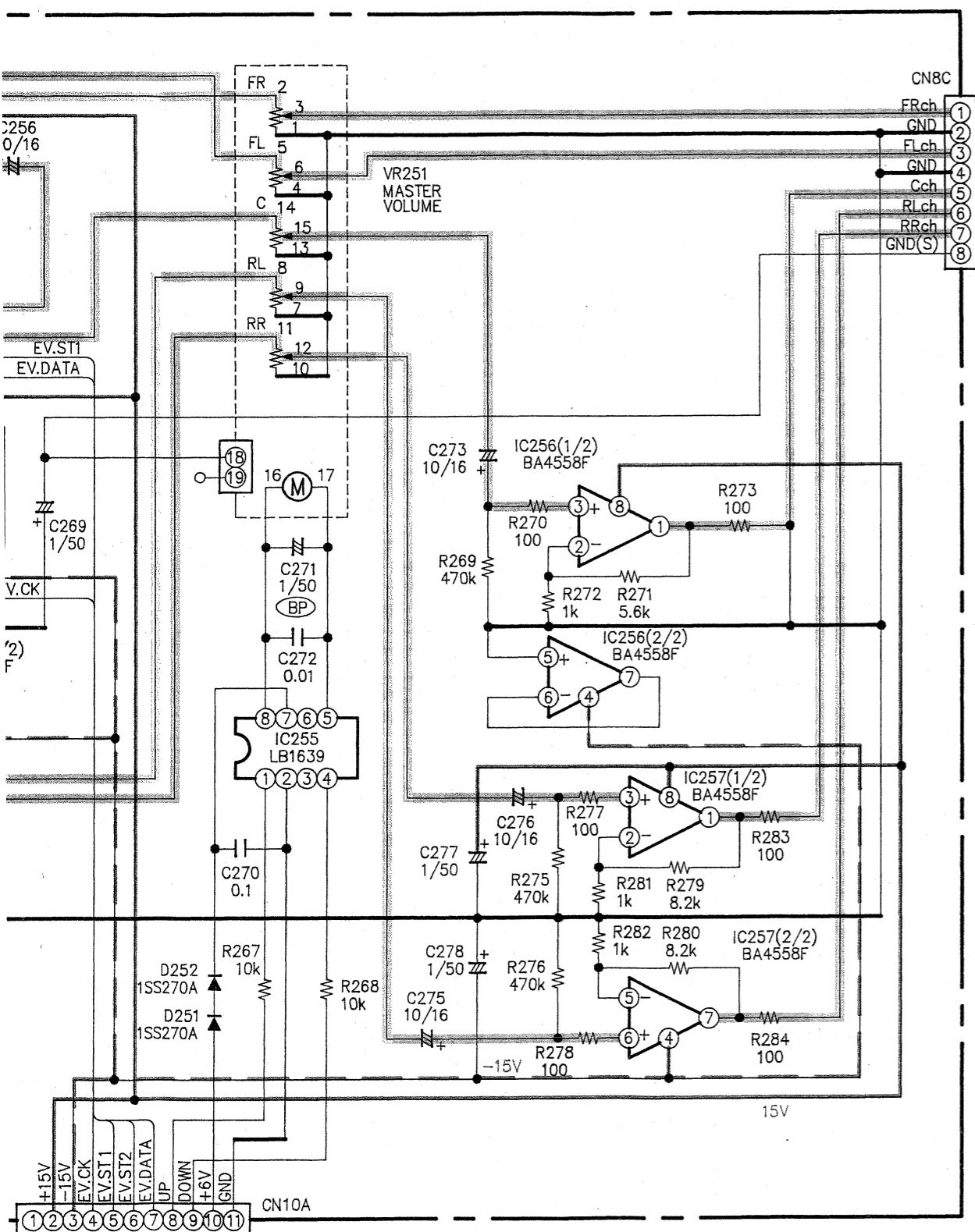
11

12

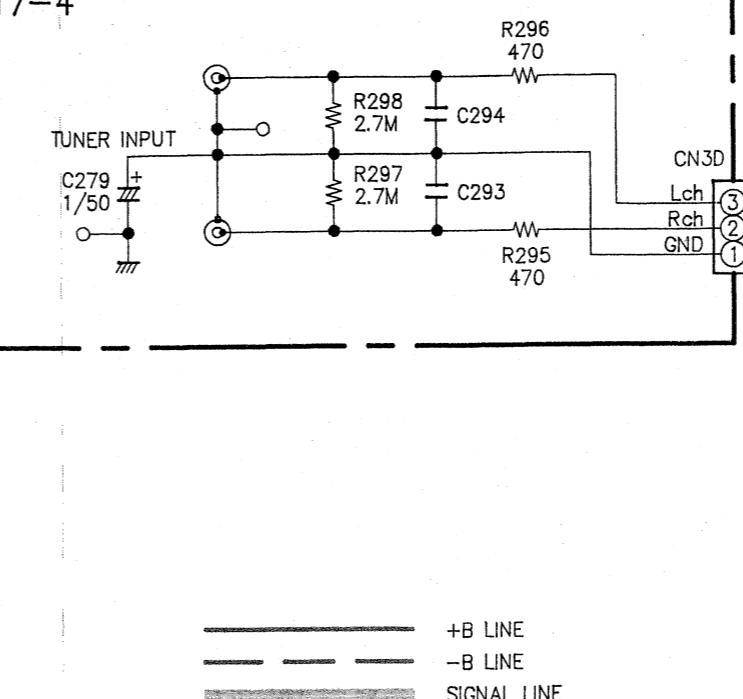
13

14

15



1U-2617-4



+B LINE
-B LINE
SIGNAL LINE

NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM,
M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD.
P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT
NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE
WITHOUT PRIOR NOTICE.

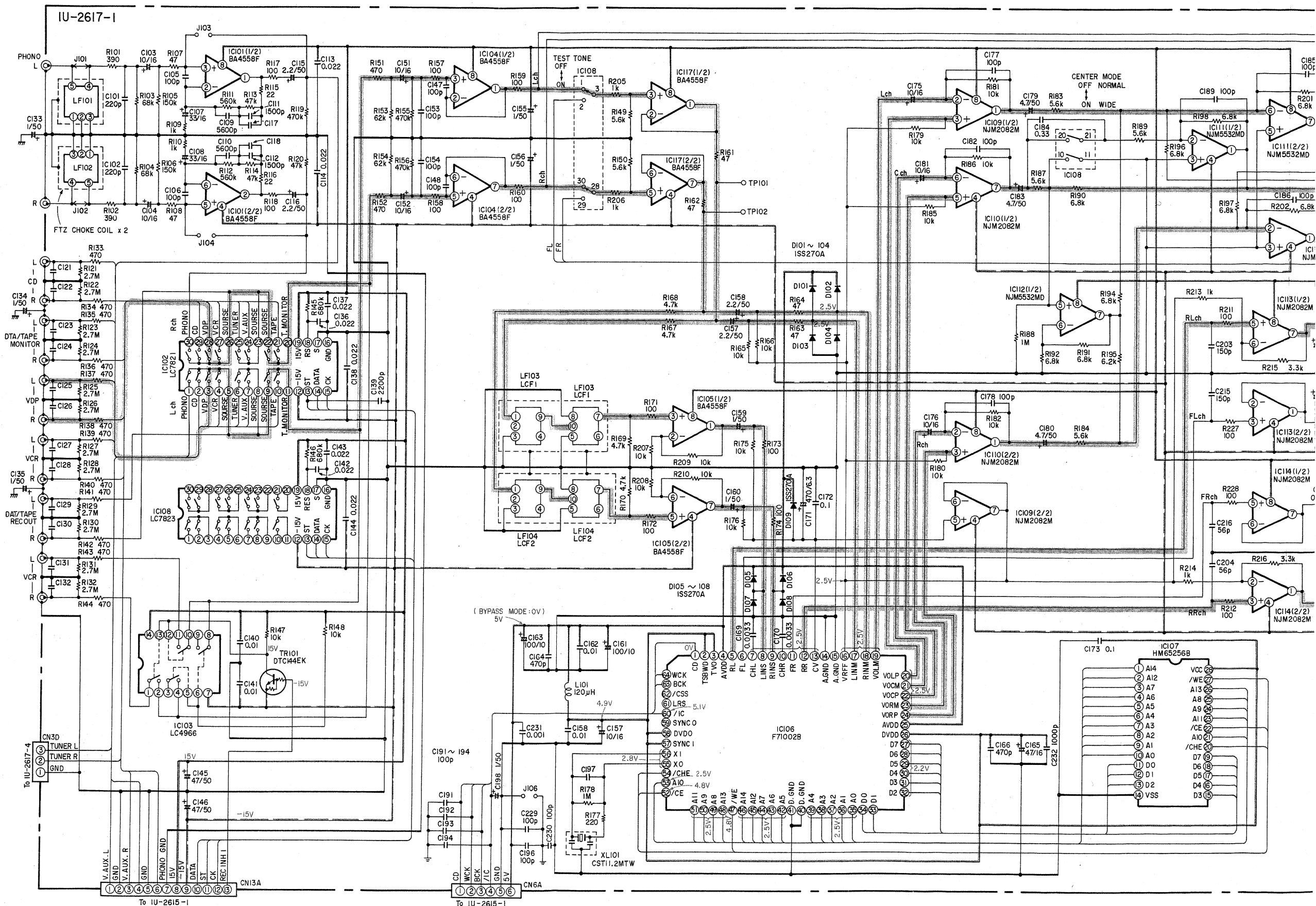
WARNING:
Parts marked with this symbol have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 millamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAM-3/3

1 2 3 4 5 6 7 8



4

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6

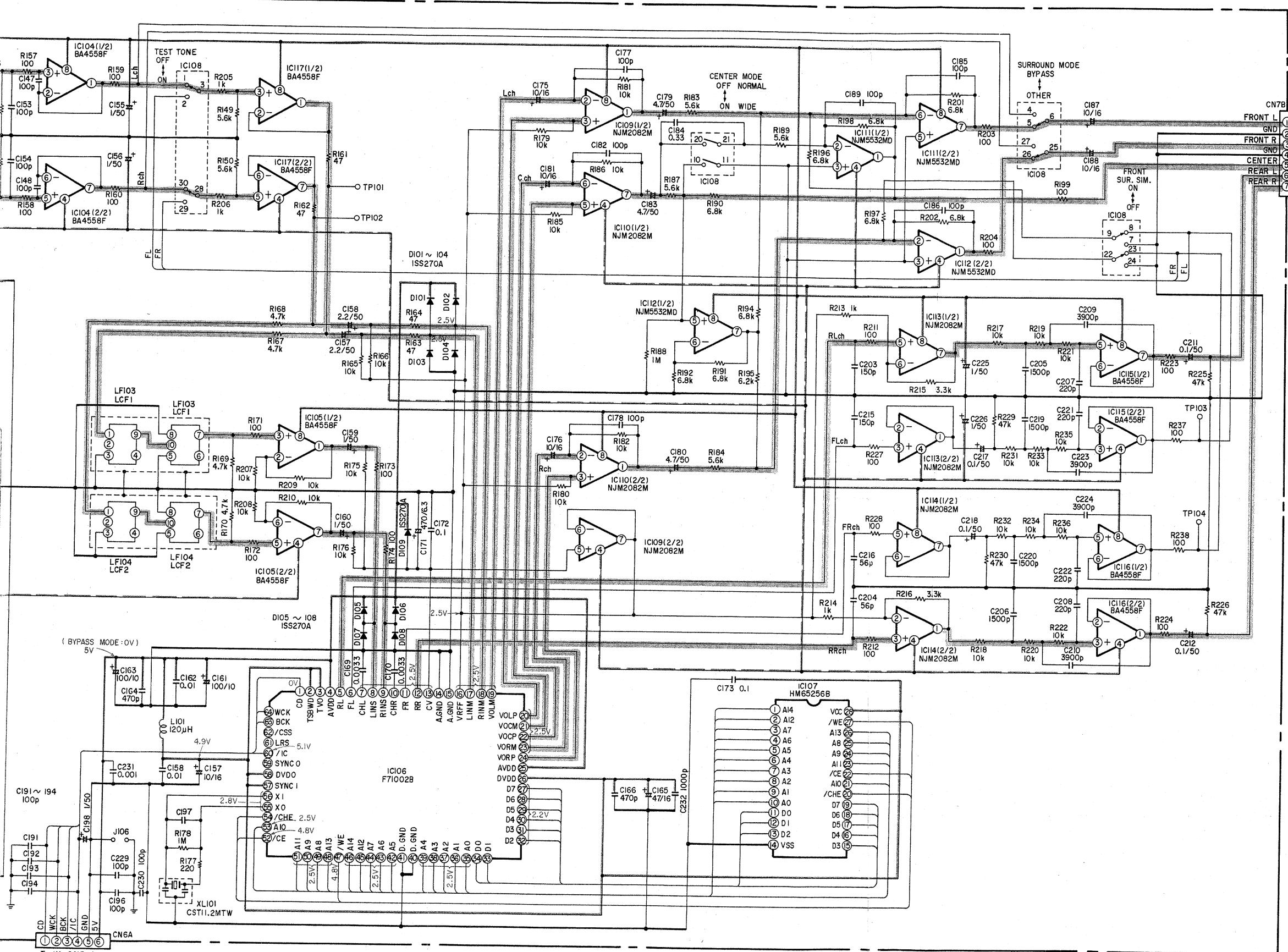
7

8

9

10

11



NOTES
 ALL RESISTANCE VALUES IN OHM. k=1,000 OHM,
 $M=1,000,000$ OHM

ALL CAPACITANCE VALUES IN MICRO FARAD.
 $P=MICRO-MICRO FARAD$

EACH VOLTAGE AND CURRENT ARE MEASURED AT
 NO SIGNAL INPUT CONDITION.

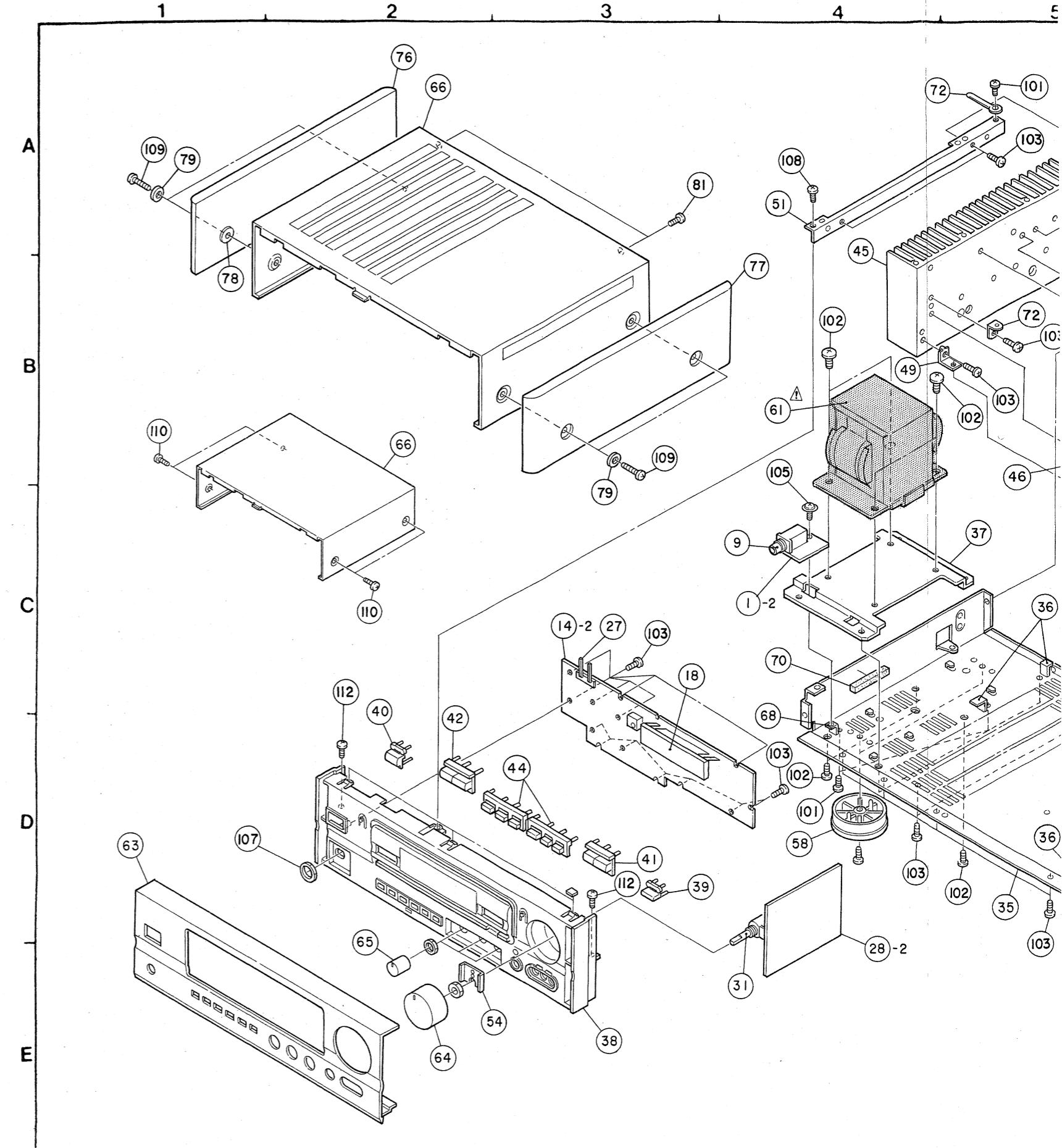
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE
 WITHOUT PRIOR NOTICE.

WARNING:
 Parts marked with this symbol have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.

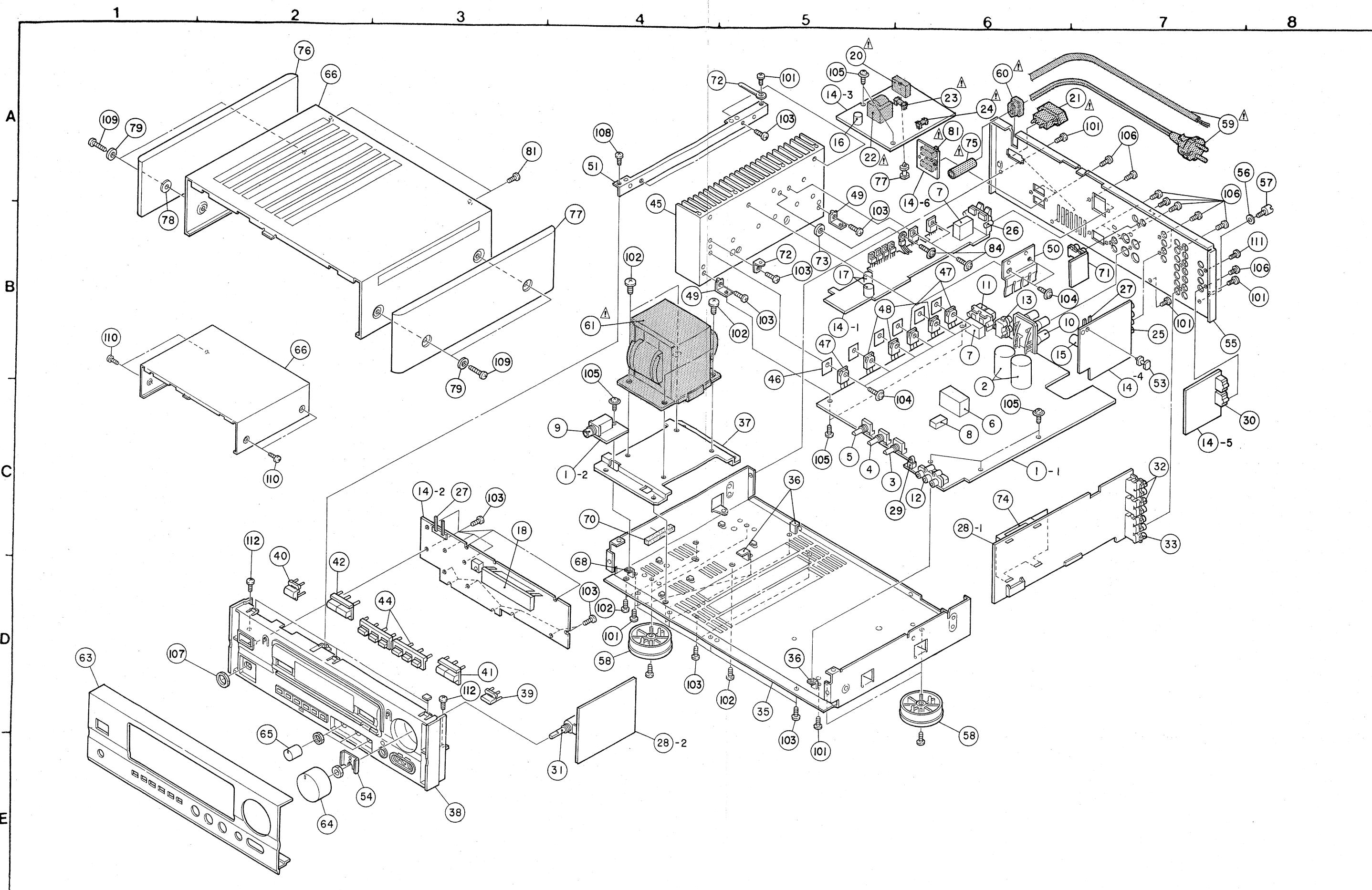
CAUTION:
 Before returning the unit to the customer, make sure you
 make either (1) a leakage current check or (2) a line to
 chassis resistance check. If the leakage current exceeds
 0.5 millamps, or if the resistance from chassis to either
 side of the power cord is less than 240 kohms, the unit is
 defective.

WARNING:
 DO NOT return the unit to the customer until the problem
 is located and corrected.

EXPLODED VIEW OF CHASSIS AND CABINET



EXPLODED VIEW OF CHASSIS AND CABINET



EXPLODED VIEW OF PARTS LIST

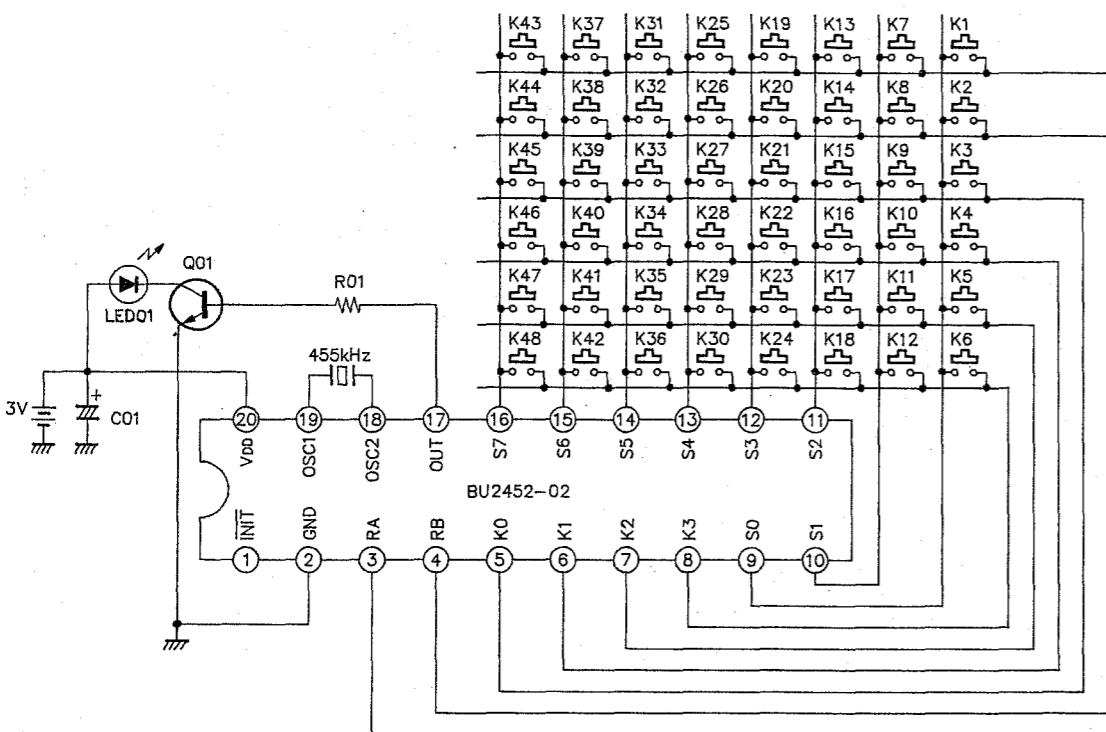
| Ref. No. | Part No. | Part Name | Remarks | Q'ty | Ref. No. | Part No. | Part Name | Remarks | Q'ty |
|----------|------------------|------------------------------|-----------------|----------------|----------|--------------|----------------------|---------------------|----------------|
| ① 1 | Note | Main Amp. Unit Ass'y | | 1 ^s | ④ 54 | 412 2897 100 | VR. Bracket | | 1 |
| 1-1 | — | Main Amp. Unit | (1) | | ⑤ 55 | Note | Rear Panel | | 1 |
| 1-2 | — | Headphone Unit | (1) | | ⑥ 56 | 477 0018 001 | Washer(P-87) | | 1 |
| 2 | Note | Chemicon | C-353,354 | 2 | ⑦ 57 | 205 071 016 | Terminal Ass'y | | 1 |
| 3 | 211 0798 006 | Variable Resistor 100kohm | Balance | 1 | ⑧ 58 | 104 0194 108 | Foot Ass'y | | 4 |
| 4 | 211 0797 117 | Variable Resistor 30kohm | Bass | 1 | ⑨ 59 | Note | AC Cord with Plug | | 1 |
| 5 | 211 0797 104 | Variable Resistor 5kohm | Treble | 1 | ⑩ 60 | 445 0056 008 | Cord Bush | | 1 |
| 6 | 214 9003 005 | Relay | | 1 | ⑪ 61 | Note | Power Trans. | | 1 |
| 7 | 214 0167 005 | Relay(G5Z-2A) | | 2 | ★ 62 | 445 8004 007 | Wire Clamper | | 10 |
| 8 | 214 0162 000 | Relay(A12W-K) | | 1 | ⑫ 63 | Note | Front Panel | | 1 |
| 9 | 204 8354 004 | Headphone Jack | | 1 | ⑬ 64 | Note | VR. Knob Ass'y | | 1 |
| 10 | 205 0550 003 | 4P Terminal | | 1 | ⑭ 65 | Note | Knob(Round) | | 3 |
| 11 | 205 0695 007 | 2P Push Terminal | | 1 | ⑮ 66 | Note | Top Cover | | 1 |
| 12 | 204 8404 006 | 3P Pin Jack | | 1 | ⑯ 67 | 461 0818 002 | Rubber Sheet | T10×10×60 | 1 |
| 13 | 205 0315 002 | 2P Connector Base | | 1 ^s | ⑰ 68 | 412 3705 000 | Earth Bracket | | 1 |
| ② 14 | Note | Rear Amp. Unit Ass'y | | | ⑱ 69 | 254 4250 783 | Chemicon 3300μF/6.3V | C-819 | 1 |
| 14-1 | — | Rear Amp. Unit | | | ⑲ 70 | 232 0168 002 | LC Filter | | 1 |
| 14-2 | — | MFD Unit | | | ⑳ 71 | 205 0274 004 | 2 P Connector Base | | 1 |
| 14-3 | — | Power Supply Unit | | | ㉑ 72 | 412 3724 007 | L Bracket | | 1 |
| 14-4 | — | Video Unit | | | ㉒ 73 | 415 0505 008 | F.S. Washer | | 1 |
| 14-5 | — | S-Video Unit | | | ㉓ 74 | 412 2814 057 | Card Spacer(L=12) | | 1 |
| 14-6 | — | Voltage Sel. Unit | | | ㉔ 75 | 415 0546 096 | UL Tube(8.3) | Black | 1 |
| 15 | 254 4254 792 | Chemicon 2200μF/16V | C-612 | 1 | ㉕ 76 | Note | Wood Board(L) | | 1 |
| 16 | 254 4256 790 | Chemicon 2200μF/25V | C-555 | 1 | ㉖ 77 | Note | Wood Board(R) | | 1 |
| 17 | 254 4259 014 | Chemicon 3300μF/35V | C-517,518 | 2 | ㉗ 78 | Note | Felt Sheet | | 4 |
| 18 | 393 4131 000 | FLD(FIP14PM8) Ass'y | FL701 | 1 | ㉘ 79 | Note | Washer φ 5 | Black | 4 |
| 19 | — | — | | | ㉙ 80 | 504 0159 039 | Side Pad | | 2 |
| ㉚ 20 | 214 0120 013 | Relay(TV-8) | RL551 | 1 | ㉚ 81 | Note | Slide Switch | Voltage Sel. Switch | 2 |
| ㉛ 21 | Note | AC Outlet | | | ㉛ 82 | | | | |
| ㉜ 22 | Note | Power Trans.(Mini) | | | ㉛ 83 | | | | |
| ㉝ 23 | Note | Fuse'A | F-001 | 1 | ㉛ 84 | | | | |
| ㉞ 24 | Note | Fuse'A | F-002 | 1 | ㉛ 85 | | | | |
| ㉟ 25 | 204 8309 004 | 4P Pin Jack(C-GND) | | 1 | ㉟ 86 | | | | |
| ㉟ 26 | 205 0592 003 | 4P Push Terminal | | 1 | ㉟ 87 | | | | |
| ㉟ 27 | 205 0075 025 | 2P Terminal | | 2 | ㉟ 88 | | | | |
| ㉟ 28 | 1U-2617 C | Surround Unit Ass'y | | 1 ^s | ㉟ 89 | | | | |
| ㉟ 28-1 | — | Surround Unit | | | ㉟ 90 | | | | |
| ㉟ 28-2 | — | Volume Unit | | | | | | | |
| ㉟ 28-3 | — | — | | | | | | | |
| ㉟ 28-4 | Tuner Input Unit | | | | | | | | |
| ㉟ 29 | 205 0578 001 | S-Terminal | | | | | | | |
| ㉟ 30 | 204 8414 012 | 2P S-Terminal | | | | | | | |
| ㉟ 31 | 211 0637 002 | Variable Resistor 100kohm | | | | | | | |
| ㉟ 32 | 204 8313 003 | 4 P Pin Jack(S-GND) | | | | | | | |
| ㉟ 33 | 204 8346 009 | 6 P Pin Jack(S-GND) | | | | | | | |
| ㉟ 34 | — | — | | | | | | | |
| ㉟ 35 | 411 1256 503 | Main Chassis | | | | | | | |
| ㉟ 36 | 412 3702 003 | P.W.B Bracket | | | | | | | |
| ㉟ 37 | 412 3715 003 | Trans Bracket | | | | | | | |
| ㉟ 38 | Note | Inner Panel Ass'y | | | | | | | |
| ㉟ 39 | Note | Push Knob(P) | | | | | | | |
| ㉟ 40 | Note | Push Knob(P) | | | | | | | |
| ㉟ 41 | Note | Function Knob(B) | | | | | | | |
| ㉟ 42 | Note | Function Knob(B) | | | | | | | |
| ㉟ 43 | — | — | | | | | | | |
| ㉟ 44 | Note | Tact Knob | | 2 | ㉟ 201 | 504 0092 060 | Stylen Paper | | 1 |
| ㉟ 45 | 417 0479 208 | Power Radiator | | 1 | ㉟ 202 | 504 9102 029 | Stylen Paper | for AC cord | 8 |
| ㉟ 46 | 415 0234 007 | Insulating Sheet | | 6 | ㉟ 203 | 505 9102 019 | Poly Cover | for Set | 1 |
| ㉟ 47 | 271 0240 006 | Transistor 2SA1491(O/P/Y)(Z) | TR321, 322, 411 | 3 | ㉟ 204 | 503 1096 004 | Cushion | | 2 |
| ㉟ 48 | 273 0389 002 | Transistor 2SC3855(O/P/Y)(Z) | TR317, 318, 410 | 3 | ㉟ 205 | GEN 2487 | Envelope Sub Ass'y | | 1 ^s |
| ㉟ 49 | 412 3225 108 | P.W.B Bracket(A) | | 2 | ㉟ 205-1 | 505 8006 019 | Envelope | | (1) |
| ㉟ 50 | 412 3314 200 | Spring Plate(A) | | 1 | ㉟ 205-2 | 511 2541 009 | Inst. Manual | | (1) |
| ㉟ 51 | 412 3526 302 | Radiator Bracket | | 1 | ㉟ 205-3 | Note | Inst. Manual | | (1) |
| ㉟ 52 | 445 0048 003 | Cord Holder(L=76) | | 1 | ㉟ 205-4 | 399 0210 004 | Remote Control | RC-167 | (1) |
| ㉟ 53 | 412 2814 028 | Card Spacer(L=10) | | 1 | ㉟ 205-5 | — | Battery | | (2) |

ADDENDUM PARTS LIST

| Ref.No. | Part Name | Part No. | | |
|------------|----------------------|---------------|----------------|--------------|
| | | Multiple Gold | Multiple Black | U.K. Black |
| ① 1 | Main Amp. Unit Ass'y | (1s) | 1U-2615 C | 1U-2615 D |
| 2 | Chemicon C-353,354 | (2) | 254 4365 717 | 254 4374 708 |
| 6800μF/56V | | | 6800μF/56V | 8200μF/56V |
| ② 14 | Rear Amp. Unit Ass'y | (1s) | 1U-2616 C | 1U-2616 D |
| ㉛ 21 | AC Outlet | (1) | 203 3942 007 | 203 3942 007 |
| ㉛ 22 | Power Trans.(Mini) | (1) | 233 6068 002 | 233 6071 002 |
| ㉛ 23 | Fuse (F-001) | (1) | 206 1015 087 | 206 1015 032 |
| ㉛ 24 | Fuse (F-002) | (1) | 206 1015 061 | — |
| ㉛ 25 | | | 2A, 250V | 2A, 250V |
| ㉛ 38 | Inner Panel Ass'y | (1) | 146 1464 420 | 146 1464 433 |
| ㉛ 39 | Push Knob(P) | (1) | 113 1465 050 | 113 1465 047 |
| ㉛ 40 | Push Knob(P) | (1) | 113 1292 210 | 113 1292 207 |
| ㉛ 41 | Function Knob(B) | (1) | 113 1631 004 | 113 1535 087 |
| ㉛ 42 | Function Knob(B) | (1) | 113 1535 003 | 113 1535 016 |
| ㉛ 44 | Tact Knob | (2) | 113 1454 210 | 113 1454 207 |
| ㉛ 55 | Rear Panel | (1) | 105 1093 120 | 105 1093 146 |
| ㉛ 59 | AC Cord with Plug | (1) | 206 2070 005 | 206 2024 103 |
| ㉛ 61 | Power Trans. | (1) | 233 6069 001 | 233 6070 003 |
| ㉛ 63 | Front Panel | (1) | 144 2321 113 | 144 2321 126 |
| ㉛ 64 | VR. Knob Ass'y | (1) | 112 0726 124 | 112 0569 242 |
| ㉛ 65 | Knob(Round) | (3) | 112 0685 113 | 112 0685 100 |
| ㉛ 66 | Top Cover | (1) | 102 0314 131 | 102 0314 128 |
| ㉛ 76 | Wood Board(L) | (1) | 101 2500 005 | — |
| ㉛ 77 | Wood Board(R) | (1) | 101 2501 004 | — |
| ㉛ 78 | Felt Sheet | (4) | 124 0032 002 | — |
| ㉛ 79 | Washer φ 5 | (4) | 475 1006 016 | — |
| ㉛ 81 | Slide Switch | (2) | 212 2611 003 | 212 2611 003 |
| ㉛ 82 | AC Adapter(4.8) | (2) | 202 0043 003 | 202 0043 003 |
| ㉛ 83 | | | | |
| ㉛ 84 | | | | |

SCHEMATIC DIAGRAM (RC-167)

1 2 3 4



SPECIFICATIONS

1. When each Key is pressed double transmission is not performed.

When one side is released from double pressed state, transmit code on unreleased side.

NOTES

ALL RESISTANCE VALUES IN OHM. K=1,000 OHM, M=1,000,000 OHM

ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD

EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.

CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

REMOTE CONTROL UNIT ASS'Y

PARTS LIST OF EXPLODED VIEW

| Ref. No. | Part No. | Part Name | Remarks | Q'ty |
|-----------------------------|--------------|--|----------------------|----------|
| SEMICONDUCTORS GROUP | | | | |
| IC1 | — | IC BU2462-02 | μ-Com | |
| Q1 or | 273 0195 908 | Transistor 2SC3377 (Q/R) Transistor 2SC2060 (Q/R) | | |
| LED1 or | — | LED SE303ARF-CXY LED SID1K10CXM | Infrared Infrared | |
| RESISTORS GROUP | | | | |
| R1 | 241 2397 901 | Carbon Resistor 220ohm, 1/10W | RD14B2E221J(S) | |
| CAPACITORS GROUP | | | | |
| C1 | 254 4213 021 | Electrolytic 47μF/6.3V | CE04W0J470M | |
| OTHER GROUP | | | | |
| X1 | — | (P.W. Boardd) Ceramic Resonator | CSB455EB | (1) 1 |

CORDS TABLE

| KEY No. | System address | | | | | Custom code | | | | Extension | | Mask | Judgment | Remarks | Item No.1 | Item No.2 | Item No.3 |
|---------|----------------|----|----|----|----|-------------|----|----|----|-----------|-----|------|----------|---------|-----------|------------------|-----------|
| | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | K | | |
| K1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | CENTER ▼ | O |
| K2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | REAR ▼ | O |
| K3 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | MÉMOLY | O |
| K4 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | DISC SKIP | O |
| K5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | VDP/DBS | O |
| K6 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | CENTER ▲ | O |
| K7 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | REAR ▲ | O |
| K8 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | MASTER VOLUME ▼ | O |
| K9 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | CD PLAY (▶) | O |
| K10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | DECK STOP (■) | O |
| K11 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | PHONO | O |
| K12 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | SET - (DELAY -) | O |
| K13 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | CLEAR | O |
| K14 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | MASTER VOLUME ▲ | O |
| K15 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | CD STOP (■) | O |
| K16 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | DECK A/B | O |
| K17 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | DAT/TAPE MONITOR | O |
| K18 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | SET + (DELAY +) | O |
| K19 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | PARAMETER | O |
| K20 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | BYPASS | O |
| K21 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | O |
| K22 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | AUTO SERCH + (◀) | O |
| K23 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | SURROUND MODE | O |
| K24 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | PRESET ▼ | O |
| K25 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | TUNER | O |
| K26 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | T.TONE | O |
| K27 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | CD PAUSE (II) | O |
| K28 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | AUTO SERCH - (◀) | O |
| K29 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | PANEL | O |
| K30 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | PRESET ▲ | O |
| K31 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | VIDEO SELECT | O |
| K32 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | CD | O |
| K33 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | DECK PLAY (▶) | O |
| K34 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | DECK FF (▶) | O |
| K35 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | MÜTING | O |
| K36 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | POWER | O |
| K37 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | V.AUX | O |
| K38 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | VCR | O |
| K39 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | DECK PLAY (REV◀) | O |
| K40 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | DECK REV (◀) | O |
| K41 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | VCR-2 | O |
| K42 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | DAT/TAPE-2 | |
| K43 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | CD-DIRECT | |
| K44 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | ◀ CENTER MODE | |
| K45 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | EFFECT | |
| K46 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | | | | |